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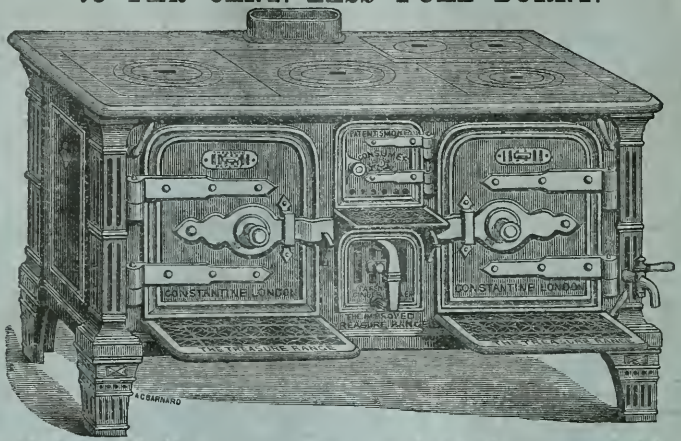

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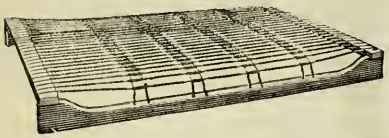

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For further information apply to the Dean, Dr. F. TAYLOR.

Guy's Hospital, London, S.E., July 1882.

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Diseases of the Ear—Dr. Edward Woakes.
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A Scholarship, value £25, in Anatomy, Physiology, and Chemistry, to second year's Students.

A Scholarship, value £20, in Clinical Medicine.

A Scholarship, value £20, in Clinical Surgery.

A Scholarship, value £20, in Clinical Obstetrics.

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Two ENTRANCE SCIENCE SCHOLARSHIPS of £100 and £60 respectively, open to all First Year's Students, will be offered for competition. The examination will be held on the 4th, 5th, and 6th of October, and the subjects will be Chemistry and Physics, with either Botany or Zoology, at the option of Candidates.

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TWO ENTRANCE SCHOLARSHIPS (next October).—Value £80 and £40 respectively. Subjects—Latin, Mathematics, French or German, and Chemistry and Natural Philosophy. These Scholarships are the same as the June Examination of the University of London Matriculation—Livy, Book II.

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Westminster Hospital, S.W.

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The Introductory Lecture, by Dr. CHAMBERS, Monday, October 2nd, 1882, at 3.30 P.M.

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21, Paradise Street.

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NORMAL SCHOOL OF SCIENCE AND ROYAL SCHOOL OF MINES, South Kensington and Jermyn Street.—The Session 1882-83 will open on October 2nd, 1882. The Prospectus may be obtained from the Registrar, Normal School of Science, South Kensington, S.W.

OWENS COLLEGE, MANCHESTER.—MR. CORNISH begs to inform Students that all the Class-Books, Stationery, etc., may be had at his room in the Owens College.

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Assistant Surgeons—Mr. Andrew Clark, Mr. Robert Lyell.
Ophthalmic Surgeon—Mr. Wm. Lang.
Aural Surgeon—Mr. Arthur Hensman.
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Dental Surgeon—Mr. Turner.
Assistant Dental Surgeon—Mr Storer Bennett.
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For further information and for a Prospectus, apply to the Dean or the Resident Medical Officer, at the Hospital.

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Lists of Subjects and all necessary information may be had on application.

ALEXANDER DUNCAN, B.A., Secretary.

Faculty Hall, St. Vincent Street, Glasgow, September 1882.

UNIVERSITY COLLEGE, BRISTOL.—MEDICAL SCHOOL.

The WINTER SESSION will commence on Monday, October 2nd.

LECTURERS.

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Surgery—N. C. Dobson, F.R.C.S.
Anatomy—F. R. Cross, M.B. Lond., F.R.C.S.
Practical Anatomy—Demonstrator, W. H. Harsant, F.R.C.S.
Physiology—R. Shingleton Smith, M.D. Lond., B.Sc., M.R.C.P.
Chemistry—T. Coomber, F.C.S.
Hygiene—D. Davis, M.R.C.S.
Midwifery and Diseases of Women—J. G. Swayne, M.D. Lond., and A. E. Aust Lawrence, M.D.
Medical Jurisprudence—R. Eager, M.D. Lond., and A. J. Harrison, M.B. Lond.
Pathology and Morbid Anatomy—W. H. Spencer, M.A., M.D. Cantab., and E. Markham Skerritt, M.D. Lond., B.A., M.R.C.P.
Operative Surgery—W. P. Keall, M.R.C.S.
Practical Surgery—A. W. Pritchard, M.R.C.S.
Materia Medica and Therapeutics—J. E. Shaw, M.B. Ed.
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Demonstrator of Physiology—G. M. Smith, M.R.C.S.
Botany—A. Leipner.
Practical Chemistry—T. Coomber, F.C.S.
Comparative Anatomy—Prof. W. J. Sollas, M.A. Cantab.
Medical Tutor—J. F. Evans, M.B., C.M. Ed.

COMPOSITION FEE for Lectures, 60 guineas.

HOSPITAL PRACTICE may be attended either at the Bristol Royal Infirmary or at the Bristol General Hospital.

FEES, including Clinical Lectures.—INFIRMARY: Perpetual Medical and Surgical Practice, 20 guineas each, or in one payment, 35 guineas. HOSPITAL: Perpetual Medical and Surgical Practice, £20 each.

SCHOLARSHIPS AND PRIZES.—Numerous valuable Scholarships and Prizes are offered by the Medical School, and by the Infirmary and the Hospital.

For Prospectus and particulars apply to

E. MARKHAM SKERRITT, M.D., Hon. Sec.

Medical School, University College, Tyndall's Park, Bristol.

MEDICAL FACULTY OF UNIVERSITY COLLEGE, LIVERPOOL,

(ROYAL INFIRMARY SCHOOL OF MEDICINE).

PROFESSORS AND LECTURERS.

Medicine—A. T. H. Waters, M.D., F.R.C.P.
Surgery—Rushton Parker, F.R.C.S.
Anatomy—W. Mitchell Banks, F.R.C.S.
Physiology—Richard Caton, M.D., M.R.C.P.
Pathology—A. Davidson, M.A., M.D., M.R.C.P.
Ophthalmology—T. S. Walker, M.R.C.S.
Chemistry—J. Campbell Brown, D.Sc., Lond.
Experimental Physics—Oliver J. Lodge, D.Sc., Lond.
Midwifery and Gynæcology—J. Wallace, M.D.
Clinical Medicine—A. T. H. Waters, M.D., F.R.C.P.; T. R. Glynn, M.D., F.R.C.P.; A. Davidson, M.A., M.D., M.R.C.P.
Clinical Surgery—E. R. Bickersteth, F.R.C.S.; Reginald Harrison, F.R.C.S.; W. Mitchell Banks, F.R.C.S.
Diseases of Children—Robert Gee, M.D., M.R.C.P.
Materia Medica—W. Carter, LL.B., M.D., B.Sc.
Medical Jurisprudence—Ewing Whittle, M.D.
Botany—George Shearer, M.D., F.L.S.
Comparative Anatomy and Zoology—W. A. Herdman, D.Sc., F.L.S.

SCHOOL OF DENTAL SURGERY.

Dental Surgery—E. J. M. Phillips, L.D.S., M.R.C.S.
Dental Mechanics—R. E. Stewart, L.D.S., R.C.S.
Dental Anatomy and Physiology—F. T. Paul, F.R.C.S.
Dental Metallurgy—E. A. Councell, L.D.S., R.C.S.

The Medical and Surgical Tutors and the Demonstrators of Anatomy, Physiology, and Chemistry are in daily attendance at the Hospital and Medical School.

Numerous Prizes and Scholarships are offered for competition annually.

The Opening Meeting of the WINTER SESSION will take place on Saturday, September 30th, at 3 p.m. The Chair will be taken by the Right Hon. the EARL OF DERBY, President of the College. An Introductory Address will be delivered by MATTHEW ARNOLD, Esq.

The Meeting will take place in St. George's Hall.

The Annual Dinner, under the presidency of Dr. Glynn, will take place at the Adelphi Hotel, at 7 o'clock.

The College and School of Medicine are closely adjacent to the Royal Infirmary, and in the neighbourhood of the Eye and Ear Infirmary, and the Lying-in Hospital.

A prospectus and further information can be obtained from the Dean of the Medical Faculty, Dr. Caton, 18A, Abercromby Square, Liverpool.

UNIVERSITY OF EDINBURGH.—SESSION 1882-83.

The SESSION will be opened on TUESDAY, 24th OCTOBER 1882.

The CLASSES will be opened as follows, and will meet daily (Saturdays excepted), unless otherwise specified.

MEDICINE.

Practice of Physic *(in University New Buildings, Park Place)*—Tuesday, October 24. 9 a.m. Prof. Grainger Stewart, M.D.
Chemistry—Tuesday, October 24. 10 a.m. Prof. Crum Brown, M.D.
Surgery *(in University New Buildings, Park Place)*—Tuesday, October 24. 10 a.m. Prof. Chiene.
Institutes of Medicine or Physiology *(in University New Buildings, Park Place)*—Tuesday, October 24. 11 a.m. Prof. Rutherford, M.D.
Practical Physiology *(in University New Buildings, Park Place)*—Wednesday, October 25. 9 a.m. Prof. Rutherford, M.D.
Midwifery and Diseases of Women and Children *(in University New Buildings, Park Place)*—Tuesday, October 24. 11 a.m. Prof. Simpson, M.D.
Clinical Surgery (Mouday and Thursday)—Thursday, October 26. 12. Prof. Annandale, M.D.
Clinical Medicine (Tuesday and Friday)—Tuesday, October 24. 12 to 2. Profs. Maclagan, Grainger Stewart, T. R. Fraser, and Greenfield; and Prof. Simpson, on Diseases of Women.
Anatomy *(in University New Buildings, Park Place)*—Tuesday, October 24. 1 p.m. Prof. Turner, M.B.
Materia Medica—Tuesday, October 24. 2 p.m. Prof. Thomas R. Fraser, M.D.
Practical Materia Medica (including Pharmacy)—Tuesday, October 24. 10 a.m. Prof. Thomas R. Fraser, M.D.
Practical Chemistry—Wednesday, January 3. 2 p.m. Prof. Crum Brown.
General Pathology *(in University New Buildings, Park Place)*—Tuesday, October 24. 3 p.m. Prof. Greenfield, M.D.
Practical Pathology *(in University New Buildings, Park Place)*—Tuesday, October 24. Prof. Greenfield, M.D.
Practical Anatomy *(in University New Buildings, Park Place)*—Monday, October 2. Daily. Prof. Turner.
Anatomical Demonstrations *(in University New Buildings, Park Place)*—Tuesday, October 24. 4 p.m. Prof. Turner.
Botany (given in Summer Session)—Prof. Dickson, M.D.
Medical Jurisprudence (given in Summer Session)—Prof. Maclagan.
Natural History (given in Summer Session)—Professor Ewart.

ROYAL INFIRMARY, at Noon, Daily.

WINTER AND SUMMER.

The following means are afforded for Practical Instruction:—
Practical Anatomy, in the University New Buildings, Park Place, under the Superintendence of Prof. Turner.
Anatomical Demonstrations, in the University New Buildings, Park Place, by Prof. Turner.
Anatomical Museum, under the Superintendence of Prof. Turner.
Practical Chemistry, under the Superintendence of Prof. Crum Brown.
Practical Physiology, under the Superintendence of Prof. Rutherford.
Practical Materia Medica, including Pharmacy, under the Superintendence of Prof. Thomas R. Fraser.
Morbid Anatomy and Practical Pathology, in the University New Buildings, Park Place, under the Superintendence of Professor Greenfield.
Tutorial Class of Clinical Medicine in the Royal Infirmary, under the superintendence of the Clinical Professors.
Tutorial Class of Clinical Surgery in the Infirmary, under the Superintendence of Professor Annandale.
Obstetrical and Gynæcological Operations, under the Superintendence of Prof. Simpson.
Chemical Laboratory, under the Superintendence of Prof. Crum Brown.
Medical Jurisprudence Laboratory, under the Superintendence of Prof. Maclagan.
Physiological Laboratory and Museum, under the Superintendence of Prof. Rutherford.
Pathological Laboratory, under the Superintendence of Prof. Greenfield.
Natural History Laboratory, under the Superintendence of Professor Ewart.
Royal Botanic Garden, Herbarium, Museum, and Laboratory, under the Superintendence of Prof. Dickson.
Materia Medica Museum and Laboratory, under the Superintendence of Prof. Thomas R. Fraser.

WINTER.

Bandaging and Surgical Appliances, under the Superintendence of Professor Chiene.

SUMMER.

Practical Botany and Vegetable Histology, by Prof. Dickson.
Practical Natural History, by Prof. Ewart.
Operative Surgery, under the Superintendence of Prof. Chiene.

Classes will meet for the last time before the Christmas Holidays on Thursday December 21st, and will re-assemble for the first time after the Christmas Holidays on Wednesday January 3rd. Classes in the Faculty of Medicine close March 30th, 1883. Graduation Ceremonial in Medicine, Wednesday 1st August 1883.

During the Summer Session Lectures will be given on the following subjects:—
Botany and Vegetable Histology, by Prof. Dickson.
Medical Jurisprudence, for Medical and Law Students, by Prof. Maclagan.

[*Continued.*

UNIVERSITY OF EDINBURGH.—Continued.

Anatomical Demonstrations, in University New Buildings, Park Place, by Prof. Turner.
Clinical Medicine, by Profs. Maclagan, Grainger Stewart, T. R. Fraser, and Greenfield; and by Prof. Simpson on Diseases of Women.
Clinical Surgery, by Prof. Annandale.
Obstetrical and Gynæcological Operations, in University New Buildings, Park Place, by Prof. Simpson.
Chemistry (Advanced Class), by Prof. Crum Brown.
Medical Psychology and Mental Diseases, with Practical Instruction at the Royal Edinburgh Asylum, by the Physician Superintendent, Dr. Clouston.
Natural History, by Prof. Ewart.

MATRICULATION.—Every Student, before entering with any Professor, must produce a Matriculation Ticket for the current Session. Tickets will be issued at the Matriculation Office at the College, every lawful day, on and after 2nd October, from Ten till Four o'clock, except on Saturdays, when the office will be shut at One. Enrolment in the General Album is the only legal record of attendance in the University.

Information relative to Matriculation and the Curricula of Study for Degrees, Examinations, etc., etc., may be obtained on application at the Secretary's Office, and full details are given in the University Calendar, published by James Thin, 55, South Bridge.

By Authority of the Senatus,
August 1882. JOHN WILSON, Sec. Sen. Acad.

WESTERN MEDICAL SCHOOL, GLASGOW.

WINTER SESSION, 1882-83.

The Winter Session will be opened on Wednesday, 1st November, at 3 p.m., by an Introductory Address by Dr. McVail.

Anatomy, Descriptive and Practical—A. Ernest Maylard, M.B., B.S. Lond.
Chemistry—J. M. Milne, Ph.D.
Physiology and Histology } Wm. Limont, M.A., M.B.
Practical Physiology }
Surgery—D. N. Knox, M.A., M.B.
Medicine—D. C. McVail, M.B.
Materia Medica and Therapeutics—Neil Carmichael, M.D.
Midwifery and Gynæcology—W. L. Reid, M.D.
Medical Jurisprudence—Eben. Duncan, M.D.

SUMMER SESSION.

Practical Anatomy—A. Ernest Maylard, M.B., B.S. Lond.
Practical Chemistry—J. M. Milne, Ph.D.
Practical Physiology and Histology—W. Limont, M.A., M.B.
Operative Surgery—D. N. Knox, M.A., M.B.
Practical Pharmacy—Neil Carmichael, M.D.
Midwifery—W. L. Reid, M.D.
Public Health—Eben. Duncan, M.D.

These Lectures qualify for the Examinations of the University of Glasgow, the Faculty of Physicians and Surgeons, Glasgow, the Royal Colleges of Physicians and Surgeons, Edinburgh, London, and Dublin.

CLASS FEES.—For each Course (except Anatomy) £2 2s. Students who have attended a similar Course elsewhere will be admitted for £1 1s. Fee for Anatomy (including Practical Anatomy), £4 4s.

Further information and prospectuses may be obtained on application to Mr. KNOX, 23, Elmbank Crescent, Glasgow.

THE NEW VETERINARY COLLEGE, GAYFIELD, EDINBURGH.

Affiliated by Royal Sign Manual with the Royal College of Veterinary Surgeons.

The WINTER SESSION will commence at 2 p.m. on WEDNESDAY, OCTOBER 26th, when the Introductory Address will be delivered by Professor HUNTER.

LECTURES IN THE WINTER SESSION.

1. Veterinary Medicine and Surgery—Professor Williams, F.R.C.V.S., F.R.S.E., Professor of Veterinary Science to the Highland and Agricultural Society of Scotland, etc.
2. Anatomy and Comparative Anatomy—Prof. Lewis, M.R.C.V.S., F.L.S.
3. Physiology and Histology—Professor Hunter, L.R.C.P.E.
4. Chemistry and Toxicology—Prof. Stevenson-Macadam, F.R.S.E.
5. Therapeutics and Materia Medica—Professor Lewis, M.R.C.V.S.
6. Natural History—Professor A. N. McAlpine, B.Sc. Lond.

Clinical Medicine and Surgery—By the Principal and Assistants.

SUMMER SESSION.

1. Morbid Anatomy and Pathology—Professor Williams.
2. Practical Anatomy and Demonstrations—Professor Lewis.
3. Practical Chemistry—Professor Macadam and Mr. Falconer King, City Analyst.
4. Practical Physiology—Professor Hunter.
5. Practical Pharmacy and Materia Medica—Professor Lewis.
6. Botany—Professor McAlpine.

Practical Pathology—Dr. Hamilton, Pathologist to the Royal Infirmary.

For prospectuses and other information, apply to the Secretary, or to W. WILLIAMS, Principal.

SCHOOL OF MEDICINE, EDINBURGH.

FOUNDED 1505.

The Lectures qualify for the University of Edinburgh and the other Universities; the Royal Colleges of Physicians and Surgeons of Edinburgh, London, and Dublin, and the other Medical and Public Boards.

WINTER SESSION, 1882-83.

On 2nd October the Practical Anatomy Rooms and Chemical Laboratories will be opened.

On 24th October the Lectures will be commenced.

Anatomy—Practical Anatomy - - - Course of Lectures - - - Course of Demonstrations -	Mr. J. Symington.
Anatomy—Practical Anatomy - - - Course of Lectures - - - Course of Demonstrations -	Mr. Charles W. Cathcart.
Chemistry—Lectures - - - - Practical Chemistry - - Analytical Chemistry -	Dr. Stevenson Macadam.
Chemistry—Lectures - - - - Practical Chemistry - - Analytical Chemistry -	Mr. J. Falconer King.
Chemistry—Practical Chemistry - - Analytical Chemistry -	Mr. Ivison Macadam.
Chemistry—Lectures - - - - Practical Chemistry - - Analytical Chemistry -	Dr. Drinkwater.
Chemistry—Lectures - - - - Practical Chemistry - - Analytical Chemistry -	Mr. J. Y. Buchanan.
Practice of Physic - - - - -	Dr. John Wyllie.
Practice of Physic - - - - -	Dr. J. O. Affleck.
Practice of Physic - - - - -	Dr. Byrom Bramwell.
Pathology and Morbid Anatomy - -	Dr. Bryan Charles Waller.
General Pathology - - - - -	Dr. J. B. Buist.
Surgery - - - - - - -	Mr. Duncan.
Surgery - - - - - - -	Dr. A. G. Miller.
Surgery - - - - - - -	Dr. C. W. MacGillivray.
Midwifery and Diseases of Women and Children - - - - -	Dr. Charles Bell.
Midwifery and Diseases of Women and Children - - - - -	Dr. Peter Young.
Institutes of Medicine - - - -	Dr. James.
Institutes of Medicine - - - -	Mr. James Hunter.
Practical Physiology - - - -	
Royal Infirmary - - - - -	
Clinical Medicine - - - - -	Drs. Claud Muirhead, Brakenridge, and Wyllie. Dr. Angus Macdonald. *(For Diseases of Women.)*
,, ,, Tutorial Class for Physical Diagnosis.*	
Clinical Surgery - - - - -	Mr. Joseph Bell.
,, ,, Tutorial Class for Practical Surgery.*	
Medical Jurisprudence and Public Health	Dr. Littlejohn.
Materia Medica and Therapeutics - -	Dr. Francis W. Moinet.
Materia Medica and Therapeutics - -	
Practical Materia Medica, including Practical Pharmacy - - - - -	Dr. William Craig.
Natural History—Zoology and Comparative Anatomy - - - - -	Dr. Andrew Wilson.
Diseases of the Ear - - - - -	Dr. Kirk Duncanson.
Diseases of the Eye - - - - -	Dr. John Robertson.
Vaccination - - - - - -	Dr. Husband.
Diseases of Children - - - - -	Dr. James Andrew.
Diseases of Children - - - - -	Dr. James Carmichael.
Practical Midwifery - - - - -	Dr. Angus Macdonald.
Practical Gynæcology - - - - -	Dr. Halliday Croom.
Practical Midwifery - - - - -	Dr. Charles Bell.
Practical Midwifery and Clinical Gynæcology - - - - -	Dr. Peter Young.
Practical Gynæcology - - - - -	Dr. D. Barry Hart.

* Under the Superintendence of the Lecturers of Clinical Medicine and Surgery.

SUMMER SESSION, 1883.

On 1st May, Classes will commence in Practical Anatomy and Demonstrations, Practical and Analytical Chemistry, Materia Medica and Therapeutics, Practical Materia Medica including Practical Pharmacy, Midwifery and Diseases of Women and Children, Medical Jurisprudence and Public Health, Clinical Medicine, Clinical Surgery, Practical Physiology, Practical Pathology, Natural History (Zoology and Comparative Anatomy), Diseases of the Eye, Practical Medicine and Medical Diagnosis, Diseases of the Ear, Vaccination, Diseases of Children, Insanity, Diseases of the Skin, Operative and Practical Surgery, Practical Midwifery, and Clinical Gynæcology.

The *minimum cost* of the Education in this School of Medicine for the DOUBLE QUALIFICATION of Physician and Surgeon from the ROYAL COLLEGES of PHYSICIANS and SURGEONS, including the Fees for the Joint Examination, is £95, which is payable by yearly instalments during the period of study; whilst the *minimum cost* for the SINGLE QUALIFICATION of either PHYSICIAN or SURGEON, including Fee for Examination, is £85.

STEVENSON MACADAM, *Secretary.*

A detailed Prospectus of the Classes will be forwarded on application to the Secretary, whose address is Surgeons' Hall, Edinburgh.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH.

NOTICE IS HEREBY GIVEN, That the PRELIMINARY EXAMINATIONS in GENERAL EDUCATION by the ROYAL COLLEGES of PHYSICIANS and SURGEONS of EDINBURGH, during the Session 1882-83, will be held on the following days, at 1 p.m.:—SATURDAY, MONDAY, and TUESDAY, October 14th, 16th, 17th, 1882; TUESDAY, WEDNESDAY, and THURSDAY, April 10th, 11th, 12th, 1883; FRIDAY, SATURDAY, and MONDAY, July 6th, 7th, 9th, 1883; SATURDAY, MONDAY, and TUESDAY, October 13th, 15th, 16th, 1883.

Intending Students of Medicine are reminded that they are required to pass the above Examination, or one of those recognised by the General Medical Council as equivalent to it, before they can be registered as Medical Students.

Information as to the Subjects of Examination and Books prescribed, will be obtained by application to the Officer of either College.

DANIEL RUTHERFORD HALDANE,
President Roy. Coll. Physicians.
FRANCIS BRODIE IMLACH,
President Roy. Coll. Surgeons.

September 1882.

UNIVERSITY OF GLASGOW.

SESSION 1882-83.

The MEDICAL SESSION will be opened with an Introductory Discourse by Professor GAIRDNER, M.D., on Tuesday, the 31st October 1882.

WINTER COURSES.

Zoology, 9 a.m.—Professor Young.
Clinical Medicine, 9 a.m.—Professor M'Call Anderson and Professor Gairdner.
Clinical Surgery, 9 a.m.—Professor George Buchanan and Professor Macleod.
Chemistry, 10 a.m.; and Chemical Laboratory, 9 a.m. to 4 p.m.—Professor Ferguson.
Anatomy: Senior, 11 a.m.; Junior, 2 p.m.; and Practical Anatomy, 9 a.m. to 4 p.m.—Professor Cleland, Dr. William Allen, and other Demonstrators.
Practice of Physic, 11 a.m.—Professor Gairdner.
Materia Medica, 12 noon, and Pharmaceutical Laboratory—Professor Charteris and Dr. Napier.
Institutes of Medicine, 12 noon, and Physiological Laboratory—Professor M'Kendrick and Dr. J. M'Gregor Robertson, the Muirhead Demonstrator.
Surgery, 1 p.m.—Professor Macleod.
Midwifery, 4 p.m.—Professor Leishman.
Public Health—Professor Simpson.

SUMMER SESSION.

During the Summer Session the Courses of Botany (Professor Bailey Balfour), Practical Chemistry, Forensic Medicine (Professor Simpson) and Clinical Medicine, and Clinical Surgery are given. There are also Courses of Anatomy (Lectures on Embryology), Practical Anatomy, Practical Zoology, Vegetable Histology, and Practical Botany, Practical Physiology (including Histology), Practical Materia Medica, Practice of Physic, Practical Pathological Histology, and Operative Surgery.

LECTURERS.

Pathology—The Courses of the Pathologist of the Western Infirmary, Dr. Joseph Coats, and of the Pathologist of the Royal Infirmary, are recognised.
Diseases of the Eye—Thomas Reid, M.D., Waltonian Lecturer (Summer Course).
Insanity—Dr. David Yellowlees, Royal Asylum, Gartnavel (Summer Course).

WESTERN INFIRMARY.—This Hospital, near the University, contains 380 beds for Medical and Surgical patients, also Wards for Skin Diseases, and one for Diseases peculiar to Females.

DEGREES.—Three Medical Degrees are conferred, viz.: Bachelor of Medicine (M.B.) and Master of Surgery (C.M.), which must be taken together, and Doctor of Medicine (M.D.); all of which are recognised by the Medical Act as qualifying for practice throughout the British dominions.

COST OF EDUCATION.—The Fee for each class is £3 3s., and the total minimum expenses for classes and graduation fees for M.B. and C.M. amount to about £90. The fee for M.D. is £15 8s.

BURSARIES.—Bursaries to the annual amount of about £1,000 may be held by Students during their medical studies.

Full particulars connected with the course of education and examination required for the Degrees, and the Preliminary Examination required to be passed by Students before beginning medical study, will be found in the University Calendar (by post, 3s.); or a syllabus of the regulations, fees, etc., may be obtained by applying to Mr. MOIR, Assistant Clerk of Senate.

ROYAL (DICK'S) VETERINARY COLLEGE, CLYDE STREET, EDINBURGH.

(Founded by the late Professor Dick, 1823.)

Trustees—LORD PROVOST, MAGISTRATES, and COUNCIL of the CITY of EDINBURGH.

Principal—PROFESSOR THOMAS WHALLEY, M.R.C.V.S.

WINTER SESSION commences about 25th OCTOBER.

Prospectus and full particulars on application.

CLASSES Open to Amateurs.

KING AND QUEEN'S COLLEGE OF PHYSICIANS IN IRELAND.

The Examination for the LICENSE IN MEDICINE is divided into two parts

The subjects of the Previous or First Examination are—Anatomy, Physiology, Chemistry, and Materia Medica. The subjects of the Second or Final Examination are—Medicine, Pathology, Therapeutics, Hygiene, Medical Jurisprudence, and Midwifery.

Examinations in the subjects of the First Part are held quarterly—in January, April, July, and October.

Stated Examinations for the SECOND PART are held on the Monday, Tuesday, and Wednesday following the First Friday in each month, excepting August and September. Gentlemen wishing to present themselves should make application a fortnight previously.

Candidates who have completed the Curriculum relating to the subjects of the Previous Examinations are eligible to present themselves to that Examination.

Persons qualified as follows are required to undergo the *second* or *final* part of the Professional Examination *only*, viz.:—

1. Candidates who have obtained by Examination one or more registrable Qualifications, or a Degree in Medicine in a Foreign University recognised by the College.

2. Candidates who, having completed the Curriculum required by the College, have passed the previous Examination or Examinations of any of the Licensing Corporations of the United Kingdom.

Candidates who are Registered Physicians or Surgeons of five years' standing are further exempted from the written portion of the Final Examination.

Examinations for the LICENSE IN MIDWIFERY are held on the Thursday following that for the License in Medicine, to which none are eligible except Licentiates of the College and Candidates who hold a registrable Qualification.

Fee for the License in Medicine, Fifteen Guineas, which may be divided into Five Guineas for the Previous Examination, and Ten Guineas for the Final; in Midwifery, Three Guineas. If both Licenses be taken in the same month, the fee for both will be Sixteen Guineas.

N.B. The Fee for the License in Medicine to graduates in Arts and Medicine of any University in the United Kingdom is Five Guineas.

Examinations for the MEMBERSHIP of the College are held *quarterly* in the following subjects:—1. Principles of Medicine including Pathology, Medical Anatomy, and Medical Chemistry; 2. Practice of Medicine, including Principles of Public Health; 3. Clinical Medicine.

Licentiates of the College of three years' standing are alone (except under certain conditions) eligible for Examination. N.B.—Licentiates before 10th December 1878, are eligible to become Members without Fee or Examination.

Fee for the Membership, Twenty Guineas.

The election for FELLOWSHIP takes place twice a year—on the first Friday in April and on St. Luke's Day (October 18th).

Candidates must be proposed and nominated three months previously. Fee, Sixty Pounds.

J. MAGEE FINNY, M.D., Univ. Dub.,
College Hall, Kildare Street, Dublin. Fellow and Registrar.

QUEEN'S COLLEGE, BELFAST.

FACULTY OF MEDICINE.

ANATOMY AND PHYSIOLOGY—P. Redfern, M.D., F.R.C.S.
CHEMISTRY—E. A. Letts, Ph.D., F.R.S.E., F.C.S.
PRACTICE OF MEDICINE—James Cuming, M.A., M.D., F.K.Q.C.P.
PRACTICE OF SURGERY—Alexander Gordon, M.D.
MATERIA MEDICA—J. S. Reid, M.D.
MIDWIFERY—R. F. Dill, M.D.
MEDICAL JURISPRUDENCE—J. F. Hodges, M.D., F.C.S., F.I.C.
NATURAL PHILOSOPHY—Joseph D. Everett, A.M., D.C.L., F.R.S.
ZOOLOGY AND BOTANY—Robert O. Cunningham, M.D., F.L.S.

The Lectures of the Winter Session of 1882-83 will commence on Tuesday, October 31, and the Lectures on Midwifery, six months' course, on February 1. The Lectures on Botany and Medical Jurisprudence, and the Summer Courses of Practical Chemistry and Experimental Physics will commence on May 1, 1883.

The Anatomical Rooms are open for the whole day, and students are aided in their Dissections by the Professor of Anatomy, and the Demonstrator.

The Examinations for Medical Scholarships, tenable for one year, and of which two are awarded to students of each year of the Medical course, will commence on October 24.

FEES.—Anatomy and Physiology—1st course, £3; each subsequent course, £2. Demonstrations and Practical Anatomy—each course, £3. Practical Chemistry, £3. Other Medical Lectures—1st course, £2; each subsequent course, £1.—BELFAST ROYAL HOSPITAL, Clinical Fees, a Winter Session, £5 5s.; a Summer Session, £2 2s.; perpetual Fee, payable in two instalments, £10 10s. Hospital Fee, half a guinea for each Winter or Summer Session. ULSTER HOSPITAL for Diseases of Women and Children, and MIDWIFERY DISPENSARY, 11, Fisherwick Place.—Fee for Winter six months, £3 3s. LYING-IN HOSPITAL.—Fee for six months, £2 2s. BELFAST DISTRICT LUNATIC ASYLUM.—Fee for course, £3.

(By order of the President),
JOHN PURSER, M.A., Registrar.

TRINITY COLLEGE MEDICAL SCHOOL.

SESSION 1882-83.

The following Departments of Practical Study will open on October 1st—

Practical Anatomy.—The Dissecting Room will be open daily under the direction of Professor Macalister, M.D., F.R.S., assisted by Dr. Little, University Anatomist, Drs. Barton, Nugent, and Wright, and four Assistant Demonstrators.

Practical Chemistry.—The Chemical Laboratory will be open daily under the direction of Professor Reynolds, M.D., F.R.S., assisted by Mr. Early, F.I.C., Demonstrator of Chemistry.

Practical Physiology and Histology.—The Physiological Laboratory will be open daily under the direction of Professor Purser, M.D. The Museums of Anatomy, Pathology, and Materia Medica, and the College Botanic Gardens are open daily to all Students.

The following Courses of Lectures will commence on 1st November:—

Systematic Anatomy—Dr. Macalister.
Descriptive Anatomy—Dr. Little.
Surgery—Dr. Bennett.
Practice of Medicine—Dr. Finney.
Physiology—Dr. Purser.
Chemistry—Dr. Reynolds.
Midwifery—Dr. Kirkpatrick.
Physics—Mr. Fitzgerald.

Classes for private instruction for the Army, Navy, and all the Examining Boards are conducted by the four Demonstrators.

Further information can be obtained from any of the Professors, or from the Medical Registrar.

The foregoing courses can be attended by medical students who are otherwise unconnected with Trinity College.

DR. STEEVENS'S HOSPITAL, DUBLIN.

Consulting Physicians—H. Freke, M.D. Dub. Univ., Fellow K. and Q.C.P., M.R.I.A.; T. W. Grimshaw, M.D. Dub. Univ., Fellow K. and Q.C.P., Registrar-General for Ireland.
Consulting Surgeons—S. G. Wilmot, Fellow and Ex-President of the Royal College of Surgeons; G. H. Porter, Fellow and Ex-President of the Royal College of Surgeons, Surgeon in Ordinary to the Queen in Ireland.
Physicians—H. C. Tweedy, M.D. Dub. Univ., Fellow and Examiner R.C.S.I.; R. A. Hayes, M.D. Dub. Univ., F.R.C.S.I., Physician for Diseases of the Throat, National Eye and Ear Infirmary.
Surgeons—W. Colles, Fellow and Ex-President R.C.S.I., Regius Professor of Surgery T.C.D., Surgeon in Ordinary to the Queen in Ireland; E. Hamilton, M.D. Dub. Univ., Ex-President R.C.S.I., Consultng Surgeon Dublin Orthopædic Hospital; R. M'Donnell, M.D., F.R.S., Fellow and Ex-President R.C.S.I., Consultng Surgeon Dublin Orthopædic Hospital.
Resident Surgeon—T. Myles, M.B., B.Ch., Dub. Univ.
Surgeon-Dentist—J. A. Baker, F.R.C.S.I.
Obstetric Physician—A. Duke, Member and L.M., K.Q.C.P.I., Ex-Assistant-Physician Rotunda Hospital.

The Medical School formerly attached to the Hospital having been discontinued, the Medical Officers have determined to devote all their energies to the advancement of Clinical Instruction, and to render it thoroughly practical; for the attainment of which object, this Hospital affords exceptional advantages. Owing to its position, there is always a large number of casualties under treatment in this Institution, while there are to be found occupying its beds at all times numerous cases of every description of Acute and Chronic Medical and Surgical Disease. There is a Ward entirely devoted to Syphilitic Disease, and a detached building for fever cases. There is an extensive Out-Patient Department, with separate Clinics for Diseases of the Skin, Throat, Teeth, and those peculiar to Women.

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Clinical Lectures are given by the Physicians and Surgeons during the Session.

Surgical Operations are performed on Saturdays, at 10 a.m., except in cases of emergency.

There is accommodation in the Hospital for two Medical and six Surgical Resident Clinical Assistants.

The Museum, which is open daily to the Pupils of the Hospital, contains valuable Preparations, comprising Human and Comparative Anatomy, Physiology and Pathology, and a collection of Drugs used in Pharmacy.

There is also a Lending Library, containing modern Medical and Surgical Works.

The Apothecary, Mr. M'CARTHY, gives Instruction in Practical Pharmacy.

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The Session commences on the First Monday in October.

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ANATOMY AND PHYSIOLOGY (HUMAN AND COMPARATIVE) —1 p.m., Mondays, Wednesdays, and Fridays.—Charles Coppinger, F.R.C.S.I., Surgeon to the Mater Misericordiæ Hospital, Examiner in Physiology Royal University of Ireland, and Dean of the Faculty.—12 noon, daily, Saturdays excepted.—Christopher J. Nixon, B.A., M.B., LL.D. Univ. Dub., F.K. & Q.C.P., L.R.C.S.I., Physician to the Mater Misericordiæ Hospital, Physician in Ordinary to the Lord Lieutenant, and Examiner in Anatomy Royal University of Ireland.

ANATOMICAL DEMONSTRATIONS.—1 p.m., daily, Saturdays excepted.—The Professors of Anatomy and Physiology.

CHEMISTRY.—2 p.m., Mondays, Wednesdays, and Fridays.—John Campbell, A.B., M.B., Univ. Dub., M.R.I.A., Ex-Examiner in Chemistry Intermediate Education Board, Ireland, Fellow of the Royal University of Ireland, and Examiner in Chemistry R.U.I.

THEORY AND PRACTICE OF SURGERY.—3 p.m., Mondays, Wednesdays, and Fridays.—Patrick J. Hayes, F.R.C.S.E., Surgeon to the Mater Misericordiæ Hospital, Consulting Surgeon to St. Michael's Hospital, Kingstown, Visiting Surgeon to St. Patrick's College, Maynooth, and Examiner in Surgery R.U.I.

THEORY AND PRACTICE OF MEDICINE AND PATHOLOGY.—3 p.m., Tuesdays and Thursdays, and 12 noon, Saturdays.—Robert D. Lyons, M.P., M.B. Dub., F.K. & Q.C.P.I., M.R.I.A., L.R.C.S.I., Physician to the Richmond, Whitworth, and Hardwicke Hospitals, Visiting Physician to the College of Maynooth, and Ex-Pathologist-in-Chief to the British Army in the Crimea, and Member of Senate of Royal Irish University.

THEORY AND PRACTICE OF MIDWIFERY.—2 p.m., Tuesdays, Thursdays, and Saturdays.—John A. Byrne, A.B., M.B., Univ. Dub., M.R.I.A., L.K. & Q.C.P.I., L.R.C.S.I., Gynæcologist to St. Vincent's Hospital, Physician to the South Dublin Dispensary, Ex-Assistant Master to the Rotunda Lying-in Hospital, President of the Dublin Obstetrical Society, and Examiner in Midwifery Royal University of Ireland.

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PRACTICAL CHEMISTRY.—12 to 3 p.m., Mondays, Tuesdays, Wednesdays, and Fridays.—John Campbell, A.B., M.B., Univ. Dub., M.R.I.A., Ex-Examiner in Chemistry Intermediate Education Board, Ireland, Fellow of the Royal University of Ireland, and Examiner in Chemistry R.U.I.

MATERIA MEDICA, PHARMACOLOGY, AND THERAPEUTICS.—1 p.m., Mondays, Tuesdays, Wednesdays, and Thursdays.—Francis J. B. Quinlan, B.A., M.D. Univ. Dub., Physician to St. Vincent's Hospital, Stephen's Green, F.K. & Q.C.P., L.R.C.S.I., M.R.I.A., and Examiner in Materia Medica Royal University of Ireland.

MEDICAL JURISPRUDENCE.—12 noon, Mondays, Tuesdays, Wednesdays, and Thursdays.—Stephen M. MacSwiney, M.D., Fellow of the King and Queen's College of Physicians, M.R.I.A., L.M. (K. & Q.) College of Physicians, M.R.C.S.E., Senior Physician to Jervis Street Hospital, and Examiner in Medicine R.U.I.

BOTANY.—2 p.m., Mondays, Tuesdays, Thursdays, and Saturdays.—George Sigerson, M.D., Ch.M., L.K. & Q.C.P., Fellow of the Linnean Society, London, M.R.I.A., and Examiner in Botany and Zoology R.U.I.

OPHTHALMOLOGY.—12 noon, Saturdays.—Charles Coppinger, L.R.C.S.I., L.K. & Q.C.P.I., Surgeon Mater Misericordiæ Hospital.

HISTOLOGY.—The Professors of Anatomy and Physiology.

NATURAL PHILOSOPHY.—11 a.m., Tuesdays, Thursdays, and Saturdays.—Gerald Molloy, D.D., Fellow Royal University of Ireland, Examiner in Natural Philosophy, Vice-Rector of the University (in the University Buildings, Stephen's Green).

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At the termination of the Winter and of the Summer Sessions, respectively, Public Examinations will be held in each Class, and a Prize of Three Guineas will be offered for competition amongst Students who shall have diligently attended at least three-fourths of the Lectures in the Class for the Current Session.

Further particulars may be learned from the Hon. Secretary, Professor CAMPBELL, 161, Rathgar Road; or on application at the School of Medicine, Cecilia Street.

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University Professor of Botany—E. Perceival Wright, M.D.
Prof. of Surgery in Trinity College—Edward H. Bennett, M.D.,Ch.M.
University Anatomist—Thomas Evelyn Little, M.D.
Prof. of Comparative Anatomy—Alexander Macalister, M.D., F.R.S.
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King's Professor of Materia Medica and Pharmacy—Walter G. Smith, M.D.
King's Professor of Midwifery—John R. Kirkpatrick, M.D.
Professor of Medical Jurisprudence—Robert Travers, M.D.

WINTER SESSION, 1882-83.

THE WINTER SESSION will commence on the 1st October by the opening of the Dissecting Room, and will terminate on the 31st March. Lectures will commence on the 1st November.

LECTURES.

Practical Anatomy—Dr. Little, at 12 o'clock, on Tuesdays, Thursdays, and Saturdays.
Anatomy—Dr. Macalister, at 1 o'clock, on Tuesdays, Thursdays, and Saturdays.
Chemistry—Dr. Reynolds, at 2 o'clock, on Tuesdays, Thursdays, and at 11 on Saturdays.
Surgery—Dr. Bennett, at 1 o'clock, on Mondays, Wednesdays, and Fridays.
Practice of Medicine—Dr. Finny, at 1 o'clock, on Tuesdays, Thursdays, and Saturdays.
Midwifery—Dr. Kirkpatrick, at 4 o'clock, on Mondays, Wednesdays, and Fridays.
Heat, Electricity, and Magnetism—Mr. Fitzgerald, at 2 o'clock, on the days published at the commencement of each term.
Physiology—Dr. Purser, at 12 o'clock, on Mondays, Wednesdays, and Fridays.
N.B.—The Courses consist of Fifty-six Lectures. Attendance on at least Forty-two Lectures in each Course is required. Christmas Vacation commences on 18th December, and terminates on 31st December.

MEDICAL SCHOLARSHIPS.

Two Medical Scholars are elected annually by the Board of Trinity College, at an Examination held at the end of June, subject to conditions stated in the College Calendar. Each Scholarship is worth £20 per annum, and is tenable for two years.

MATRICULATIONS.

No Student can be permitted to attend any of the Lectures delivered in the School of Physic, or to attend Dissections, who has not complied with the provisions of the School of Physic Act (Geo. III, ch. 84) as to Matriculation.
The Medical Registrar will attend at 1 o'clock each day to matriculate students.
July 27th, 1882. HENRY W. MACKINTOSH, M.A., Medical Registrar.

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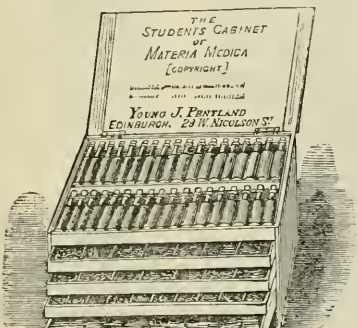

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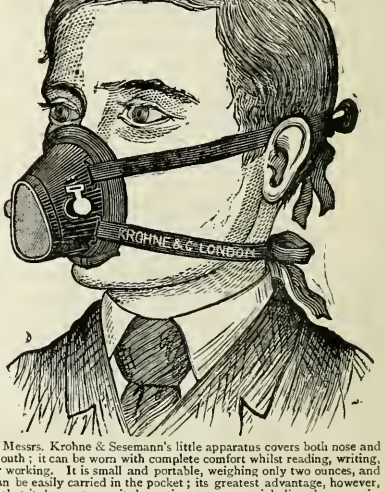

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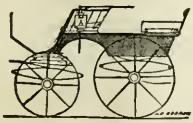

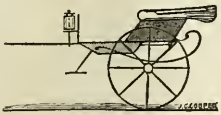

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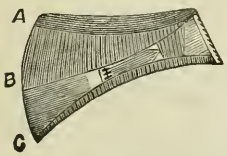

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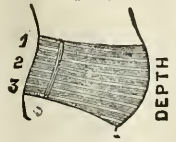

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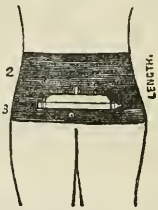

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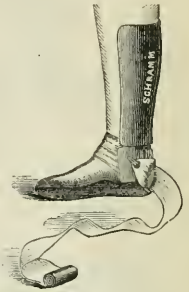

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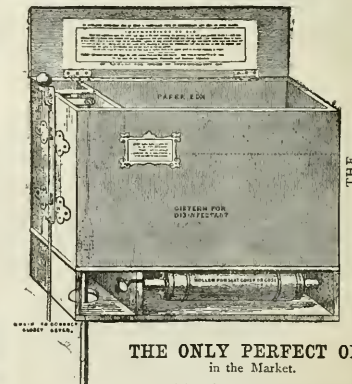

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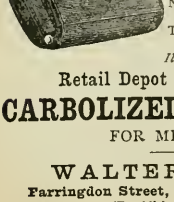

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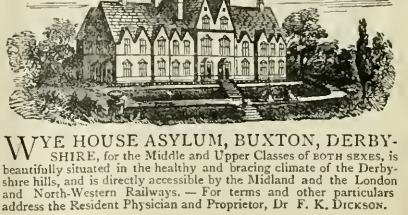

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Chloride of Calcium	0.34
Nitrate of Calcium	3.03
Sulphate of Calcium	6.26
Sulphate of Potassium	0.39
Iron (Ferric Oxide)	0.35
Silica	0.60
Carbonate of Calcium	2.07
Carbonate of Magnesium	1.03
Organic matter and loss	0 80
Lithia	traces
Arsenic (AS^2 0.5) 0.5=Arseniate of Sodium ..	0.83
TOTAL	17.50

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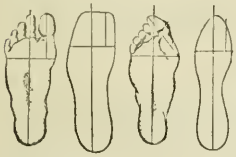

FIG. 1. FIG. 2.

PARKER & Co. continue to supply all the fashionable shapes, but those who really suffer with their feet will find the ALUPIKOS Boot all that can be desired.

The Sketches a, a, from Professor Flower's 'Fashion in Deformity'.

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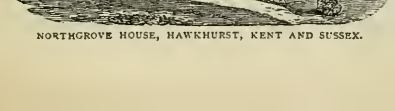

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GREAT BRITAIN AND IRELAND.

MEDICAL QUALIFICATIONS.

THE number of examining bodies in the United Kingdom which grant degrees and diplomas capable of registration under the Medical Act of 1858 is nineteen. The registrable qualifications obtainable from them are as follows.

1. *Royal College of Physicians of London:* Diplomas of Licentiate, Member, and Fellow.
2. *Royal College of Surgeons of England:* Diplomas of Member and Fellow.
3. *Apothecaries' Society of London:* Licence.
4. *University of Oxford:* Degrees of Bachelor and Doctor of Medicine.
5. *University of Cambridge:* Degrees of Bachelor and Doctor of Medicine, and Bachelor and Master in Surgery.
6. *University of London:* Degrees of Bachelor of Medicine, Doctor of Medicine, Bachelor of Surgery, and Master in Surgery.
7. *University of Durham:* Licences in Medicine and in Surgery; Degrees of Bachelor of Medicine, Doctor of Medicine, Bachelor of Surgery, and Master in Surgery.
8. *Royal College of Physicians of Edinburgh:* Diplomas of Licentiate, Member and Fellow.
9. *Royal College of Surgeons of Edinburgh:* Diplomas of Licentiate and Fellow.
10. *Faculty of Physicians and Surgeons of Glasgow:* Diplomas of Licentiate and Fellow.
11. *University of Aberdeen:* Degrees of Bachelor of Medicine, Doctor of Medicine, and Master in Surgery.
12. *University of Edinburgh:* Degrees of Bachelor of Medicine, Doctor of Medicine, and Master in Surgery.
13. *University of Glasgow:* Degrees of Bachelor of Medicine, Doctor of Medicine, and Master in Surgery.
14. *University of St. Andrew's:* Degrees of Bachelor of Medicine, Doctor of Medicine, and Master in Surgery.
15. *King and Queen's College of Physicians in Ireland:* Diplomas of Member, Licentiate, and Fellow, and Licentiate in Midwifery.
16. *Royal College of Surgeons of Ireland:* Diplomas of Licentiate and Fellow.
17. *Apothecaries' Hall of Ireland:* Licence.
18. *University of Dublin:* Licences in Medicine and in Surgery; Degrees of Bachelor and Doctor of Medicine, and Bachelor and Master in Surgery.
19. *Royal University in Ireland:* Degrees of Bachelor of Medicine, Doctor of Medicine, and Master in Surgery; and a Special Diploma in Obstetrics.

In addition, the Royal Colleges of Surgeons and the Faculty of Physicians and Surgeons of Glasgow grant licences in Dental Surgery, which are registrable under the Dentists' Act.

Certificates and diplomas in State Medicine and Public Health (which at present are not registrable) are conferred after examination by the Universities of Cambridge, London, Durham, Edinburgh, Glasgow, and Dublin; by the Royal University of Ireland; and by the Royal College of Physicians in Edinburgh.

The following is a general summary of the conditions required on the part of candidates for examination; but, for further details, our readers must consult the regulations issued yearly in the Student's numbers of our contemporaries; or apply to the officers of the respective Universities, Colleges, and Halls.

The regulations of the Examining Bodies are, with very few exceptions, framed in accordance with the Resolutions and Recommendations of the General Medical Council.

Every medical student is required to be registered at the office of the General Medical Council; prior to which he must have passed an examination in subjects of general education. As evidence of this are recognised:—1. The possession of a degree in Arts of an University of the United Kingdom or of the Colonies, or of some University recognised by the Medical Council; 2. A certificate of having passed an examination in subjects of general education conducted by some one or other of the educational bodies, a list of which is given with the 'Recommendations of the General Medical Council'. No person is allowed to be registered as a medical student unless he shall have previously passed a preliminary examination in the following subjects of general education. 1. English Language, including Grammar and Composition; 2. English History; 3. Modern Geography; 4. Latin, including Translation from the Original, and Grammar; 5. Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including Simple Equations; (*c*) Geometry, including the first two books of Euclid, or the subjects thereof; 6. Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics (this subject may be passed either as preliminary, or before, or at the first professional examination); 7. One of the following optional subjects: (*a*) Greek, (*b*) French; (*c*) German; (*d*) Italian; (*e*) Any other modern language; (*f*) Logic; (*g*) Botany; (*h*) Elementary Chemistry. The preliminary examination having been passed, the student should at once register, as the commencement of the course of professional study is not recognised as dating fifteen days earlier than the date of registration. Forms for registration are supplied by the licensing bodies and at the schools and hospitals.

After passing the preliminary examination, the student may commence his medical education in one of the following ways (according to the regulations of the Licensing body with which he intends to become connected): 1. By attendance for one year on the practice of a provincial hospital or other public institution recognised for this purpose; 2. As the pupil, for one year, of a legally qualified surgeon holding sufficient public appointments to afford such opportunities of practical instruction as shall be satisfactory to the authorities; 3. By entering at once at a recognised medical school.

The minimum period of medical study required is forty-five months from the date of registration as a student, of which time at least two years and a half

must be passed at a recognised medical school. For the degrees of the Universities (except that of London and the Royal University in Ireland) the candidate is required to spend a portion of the time of medical study at the University which grants the degree, or at a College in connection therewith.

To obtain a degree, diploma, or licence, two examinations at least in professional subjects must be passed; first in the elementary subjects—Chemistry, Anatomy, Physiology, and Materia Medica; and afterwards in the practical subjects. The final examination, which must not be passed until the completion of the fourth year of study, comprises:—1. Pathology (including Morbid Anatomy); 2. Medicine (including Medical Anatomy, Clinical Medicine, and Therapeutics); 3. Surgery (including Surgical Anatomy and Clinical Surgery); 4. Midwifery; 5. Forensic Medicine.

Special arrangements exist at the Universities of Durham and St. Andrew's for granting degrees to practitioners of medicine above forty years of age.

INSTRUCTION IN THE MEDICAL SCHOOLS.

THE medical schools in London are those of St. Bartholomew's, Charing Cross, St. George's, Guy's, the London, St. Mary's, the Middlesex, St. Thomas's, and Westminster Hospitals; and the Medical Faculties of King's and University Colleges. To these may be added the London School of Medicine for Women, with which the Royal Free Hospital is connected for the purpose of clinical instruction, and Mr. Thomas Cooke's School of Anatomy and Surgery.

In the provinces in England, there are the medical departments of Queen's College, Birmingham, Owens College, Manchester, and the Medical College of the University of Durham, at Newcastle-on-Tyne; the Medical School affiliated to University College, Bristol: the Medical Faculty of University College, Liverpool (Royal Infirmary School of Medicine); together with medical schools at Leeds and Sheffield. The Universities of Oxford and Cambridge do not profess to give a complete education; but instruction in many branches is provided for at Cambridge.

In Scotland, the medical schools in which a complete course of professional education is given, are those attached to the Universities of Aberdeen, Edinburgh, and Glasgow; the Extra-Academical School in Edinburgh; and Anderson's College, the Royal Infirmary School of Medicine, and the Western School of Medicine, in Glasgow.

In Ireland, the medical schools are, the School of Physic in Ireland, the School of the Royal College of Surgeons of Ireland, and the Colleges at Belfast, Cork, and Galway. There are also several medical schools in Dublin: viz., the Carmichael College of Medicine and Surgery, the Catholic University, and the Ledwich School of Anatomy, Medicine, and Surgery.

For information regarding these institutions reference must, as we have already said, be made to the published prospectuses. We shall, however, endeavour to classify a part of the information therein contained under certain heads, viz., Clinical Instruction; Practical Surgery; Special Departments; Practical Physiology; Hospital Appointments; Tutorial Instruction; and Scholarships, Exhibitions, and Prizes.

CLINICAL INSTRUCTION.—At all the hospitals connected with medical schools the physicians and surgeons deliver, at stated intervals, lectures on the cases under their care, in addition to making comments during their visits to the wards or in the operating theatre. In some instances, special provision is also made by the appointment of one or more of the hospital staff as clinical professors or lecturers; and in several of the hospitals a certain number of beds are specially devoted to the purpose of clinical instruction. At Guy's Hospital, forty patients are set aside in the medical wards, and are visited and their cases lectured on by the physicians in the winter, and by the assistant-physicians in the summer session: the surgeons also select cases for clinical instruction. A similar arrangement exists at the London Hospital, where two wards are devoted to the express purpose of teaching clinical medicine; the cases being lectured on by the physicians in the winter, and by the physicians or assistant-physicians in the summer. Special clinical professorships in medicine and surgery, in addition to the ordinary clinical lectures given by the physicians and surgeons, exist at the King's and University College Hospitals. In the former, the professor of clinical medicine is Dr. George Johnson, and the professors of clinical surgery are Mr. John Wood and Mr. Lister. In University College Hospital there are two special chairs, known as the 'Holme Professorships' of Clinical Medicine and Surgery. The Holme professor of clinical medicine is Dr. Wilson Fox, who delivers clinical lectures, on Tuesdays and Thursdays, on the significance of the general signs of disease, and on the special modes of examination, diagnosis, and treatment of individual cases. There are also two assistant teachers of clinical medicine, Dr. Gowers and Dr. Barlow, who hold classes for instruction in physical examination, the investigation of diseases of the circulatory, respiratory, and nervous systems, the examination of the urine, etc. The Holme professor of clinical surgery, Mr. Christopher Heath, gives a clinical lecture once a week, and also holds a weekly clinical examination on surgical cases in the operating theatre; these examinations, while open to the whole class, being specially intended for the instruction of the senior students. Mr. Marcus Beck and Mr. A. E. Barker are assistant-professors of clinical surgery. A special course of lectures on Clinical Surgery has been established at St. Thomas's Hospital, the lecturer being Mr. John Croft. In Cambridge, clinical instruction in medicine and surgery is given at Addenbrooke's Hospital throughout the year. At Leeds, clinical classes meet at appointed hours to receive instruction, in the wards, from the physicians. In the Liverpool Royal Infirmary, Dr. Glynn, one of the physicians, gives, once a week during the winter, practical instruction in clinical medicine and the methods of physical diagnosis. Two Clinical Tutors, in the Medical and Surgical Wards, have also been appointed. In the Owens College, Manchester, there is a special professorship of clinical medicine, held by Dr. William Roberts. A medical and a surgical clinical lecture are given every week in the Manchester Royal Infirmary. Medical and Surgical Ward Classes are formed by the members of the Infirmary staff at each of the trimestral periods, commencing with October, January, and May. In the Infirmaries of Aberdeen, Edinburgh, and Glasgow, clinical lectures on medicine, surgery, and midwifery are delivered by the medical staff of each institution. The Universities of Edinburgh and Glasgow have special professors

of Clinical Medicine and Surgery. In the medical schools of Ireland, clinical courses are given through the session.

In connection with the subject of Clinical Instruction, reference must be made to means provided at several hospitals for the special purpose of training the students in the observation of cases. At the Charing Cross Hospital, a course of practical medicine will be given by Dr. M. Lubbock. It will include the methods of examining organs, the examination of morbid products, case-taking, the management of the sick-room, etc. At St. George's Hospital, a similar course will be given by Dr. Whipham. In Guy's Hospital, the ward clerks (of whom 150 or more are appointed during the year) are assisted in the examination of cases and the preparation of reports by the medical and surgical registrars, who also instruct them in physical diagnosis and in chemical and microscopical investigation. Similarly, at the London Hospital, the clinical clerks and dressers are assisted by the house-physicians and house-surgeons. At several of the medical schools there are medical tutors, who instruct the students in the physical examination and systematic description of cases. The provision made at University College Hospital has been referred to above. Classes for medical demonstration are held in the Manchester Royal Infirmary twice weekly during the summer by two of the medical officers; in which classes instruction is given in anatomy as applied to medicine, in physical and chemical examination, etc. In the University of Edinburgh, a class for instruction in clinical medicine is held in the wards of the Royal Infirmary by the clinical tutor.

PRACTICAL SURGERY.—At most of the schools, special provision is made for instruction in this important branch of medical education. The courses embrace such subjects as—the application of anatomy to surgery on the living person or the dead body; the methods of proceeding, and the manipulations necessary, in order to detect the effects of diseases and accidents; the performance of operations on the dead body; the use of surgical apparatus; the examination of diseased structures, as illustrated by preparations and recent specimens. The course of practical instruction is generally distinct from that of systematic surgery, and is in many instances given in the summer session. In the Liverpool School of Medicine, the lectures on Systematic Surgery are given thrice weekly, and there is a concurrent course of Practical Surgery twice weekly; besides which, a course of Operative Surgery is given in the summer.

SPECIAL DEPARTMENTS.—Due provision is made for both theoretical and practical instruction in *Midwifery and Diseases of Women*, so as to enable students to meet the requirements of the examining bodies.

Ophthalmic Surgery is taught by lectures and observation of cases at all the London schools; each hospital receiving ophthalmic patients except the Charing Cross, the pupils of which are admitted to the practice of the Royal Westminster Ophthalmic Hospital. As far as can be gathered from the prospectuses, the material available for the practical teaching of this subject (as far as regards in-patients) is as follows: St. Bartholomew's Hospital, 26 beds; Charing Cross (Royal Westminster Ophthalmic Hospital), 50 beds; Guy's Hospital, 50 beds (also about 3,000 out-patients, and an average of more than 1,800 operations); London Hospital, 12 beds. The other hospitals have beds for ophthalmic cases, but the number is not stated. Provision for teaching ophthalmic surgery, theoretical and practical, is made in the provincial schools. In the Universities of Aberdeen and Glasgow, instruction in ophthalmic surgery is given; and the students are admitted to see the practice of ophthalmic institutions in those cities. In the Extra-academical School of Edinburgh, and in the Schools of Medicine in Glasgow, courses of lectures on the subject are given. In Ireland, provision is made for the teaching of ophthalmic surgery in most of the medical schools.

Aural Surgery is taught as a special branch at all the London medical schools, and at the Leeds School of Medicine and the Bristol, Manchester, and Newcastle Royal Infirmaries among the provincial schools; also in the Extra-academical School in Edinburgh, and in Anderson's College and the Royal Infirmary School of Medicine in Glasgow.

Diseases of the Throat.—Special instruction in the diagnosis and treatment of diseases of the throat and larynx, and the use of the laryngoscope, is given at St. Bartholomew's Hospital by Mr. Butlin; at King's College Hospital by Dr. Curnow; at the London Hospital by Dr. Morell Mackenzie, who delivers a course of lectures on the subject; at St. Mary's Hospital by Mr. Norton; at the Middlesex Hospital by Mr. Hensman (with Diseases of the Ear); at St. Thomas's Hospital by Dr. Semon; at University College Hospital by Dr. Poore; at the Westminster Hospital by Dr. De Havilland Hall; at the Bristol Royal Infirmary by Mr. Harsant; at the Manchester Royal Infirmary by Dr. H. Simpson; at the Newcastle-on-Tyne Infirmary by Dr. Hume (with Diseases of the Ear); and in the Glasgow Royal Infirmary by Dr. E. Watson.

Diseases of the Skin.—For the teaching of this important department of medicine, special provision is made in all the London Hospitals, in the Bristol General Hospital, in the Manchester Royal Infirmary, and in the Newcastle-on-Tyne Infirmary. Demonstrations of cases, and clinical lectures, are given at stated intervals, generally once a week. In University College Hospital, Dr. Radcliffe Crocker, the physician in this department, gives clinical lectures on diseases of the skin once a fortnight. A course of lectures is given in the Edinburgh Extra-academical School. In Dublin, a course of instruction on diseases of the skin is given at the Adelaide Hospital.

Orthopædic Surgery is taught at St. Bartholomew's Hospital by Mr. Walsham; at St. George's Hospital by Mr. W. H. Bennett; and at the Westminster Hospital by Mr. Richard Davy. Mr. Hardie gives instruction on this subject at the Manchester Royal Infirmary.

Mental Diseases.—Lectures on Psychological Medicine are delivered as a separate course in most of the London schools. Special arrangements for clinical instruction are made in several instances; thus the students of St. Bartholomew's Hospital have access to a large public asylum; those of Guy's Hospital are admitted to Bethlem Hospital, and those of the London Hospital to Bethnal House. Two students of the London Schools, qualified to practise, are appointed for six months as resident clinical assistants in Bethlem Hospital. At the Leeds School of Medicine, the students attend the West Riding Lunatic Asylum at Wakefield, where Dr. Major, the Medical Director, gives clinical lectures in addition to a course of systematic lectures at the school. In Manchester, a course of clinical lectures on mental

diseases is given to senior students of Owens College by Mr. G. W. Mould, at the Asylum in Cheadle. At the Newcastle-on-Tyne College, nstruction in psychological medicine is given by Mr. Wickham, medical superintendent of Coxlodge Asylum. In the University of Edinburgh, Dr. Clouston gives a course of Medical Psychology and Mental Diseases, with practical instruction at the Morningside Asylum. In the Extra-academical School, a similar course is delivered by Dr. Batty Tuke. In the Glasgow Royal Infirmary School of Medicine, a course of lectures on Mental Diseases is given by Dr. A. Robertson, in the City Parochial Asylum. In Dublin, special courses of lectures on mental diseases are given in the Richmond, Whitworth, and Hardwicke Hospitals, adjoining which is a large asylum containing over 1,000 patients. The lectures on psychological medicine are mostly delivered during the summer session.

Public Health.—Special courses of lectures on this subject are given at St. Bartholomew's, Charing Cross, Guy's, the Middlesex and St. Thomas's Hospitals, and at King's College. At St. George's Hospital, it is included in the Course of Medicine; and at the London, St. Mary's, and Westminster Hospitals, in that on Forensic Medicine. In University College, besides the lectures, instruction in the chemical and microscopic examination of air, water, and food, is given in the hygienic laboratory. In most of the provincial schools, the subject is included in the lectures on Forensic Medicine. In Owens College, Manchester, lectures on hygiene are delivered by Dr. Ransome. A course of lectures is given in the Newcastle College of Medicine by Dr. Armstrong. In Scotland, also, the instruction in Public Health is given in connection with the lectures on Medical Jurisprudence. In Dublin, there is a professorship of Hygiene in the school of the Royal College of Surgeons.

PRACTICAL PHYSIOLOGY AND HISTOLOGY.—This subject is taught in all the schools: but more elaborate provision is made in some cases than in others.

At *St. Bartholomew's Hospital*, the course is conducted by a demonstrator and two assistant demonstrators under the superintendence of the lecturers on Physiology and Chemistry. Dr. Klein gives a course of lectures on General Histology, with demonstrations, which form part of the course on General Anatomy and Physiology.

At *Guy's Hospital*, Mr. Golding-Bird gives a course of Histological demonstrations of the elementary tissues and the chief organs of the body, with their behaviour and re-agents, as studied with the microscope. The course includes about thirty-five demonstrations, and is gone through twice in the winter session. A laboratory class in Practical Physiology, intended for advanced students, is held by Dr. Pye-Smith in the summer.

At *University College*, instruction in Practical Physiology is given by Dr. Burdon Sanderson (Jodrell Professor of Physiology) and Mr. Schäfer (Assistant Professor of Physiology). The course of Practical Physiology and Histology consists of practical lessons in Histology and the use of the Microscope, and in Chemical Physiology. A course of lectures on Embryology will be given during the winter session. In addition, a series of practical lessons on development will be given to those who have been through the course of Practical Histology. —Persons desirous of engaging in original investigation in Physiology and Histology may be admitted to the laboratory as workers on the nomination of the Jodrell Professor. An advanced course of practical Physiology, specially adapted to meet the requirements of candidates for honours at the Examinations of the University of London, is given after Christmas.

At the *Westminster Hospital*, a course of lectures and demonstrations will be given by Mr. North. The course will consist of three parts:—Lectures and demonstrations on the Histology of the Simple Normal Tissues, delivered during May, June, and July; 2. Lectures and demonstrations on the Histology of the Normal Organs and Viscera, delivered in October, November, and December.

In *Owens College, Manchester*, a very complete course of practical Physiology is conducted during the year by Dr. Arthur Gamgee, the Brackenbury Professor of Physiology. The class meets daily, except Saturdays, for systematic work in Practical Histology and Physiological Chemistry, and for demonstrations in Experimental Physiology. The Physiological Laboratory is open daily during the winter and summer sessions.

Practical Physiology is taught in the University of Edinburgh, by Professor Rutherford; in that of Aberdeen, by Professor Stirling; and in that of Glasgow, by Professor Fleming. Courses are also given in the Edinburgh Extra-Academical School; and in the Royal Infirmary School of Medicine, in Anderson's College, and in the Western Medical School, in Glasgow.

HOSPITAL APPOINTMENTS.—Numerous appointments at the hospitals are open to the diligent student, without payment (except in the few cases hereinafter noticed) of any fee. For the resident appointments, a qualification to practise is required; and, in some instances, a salary is paid in addition to the provision of rooms and board.

At *St. Bartholomew's Hospital*, four house-physicians and ten house-surgeons are appointed annually. A resident midwifery assistant is appointed every six months; an ophthalmic house-surgeon is also appointed for six months, and may be re-elected. A senior and a junior assistant-chloroformist are appointed annually. Each of these officers is provided with rooms by the hospital authorities, and receives an annual salary of £25. Clinical clerks to the medical in-patients, and to the physician-accoucheur, also clerks and dressers for the out-patient and special departments, are chosen from among the students. Forty dressers for the surgical in-patients and the surgical casualty department are selected each year; and other in-patient dresserships may be obtained on payment of £10 10s. for three months, or £16 16s. for six months.

At *Charing Cross Hospital*, a medical and a surgical registrar are appointed, each with a salary of £40 a year. A resident medical officer, a resident surgical officer, a resident obstetrical officer, an assistant medical officer, and an assistant surgical officer, are appointed every six months, after examination, preference in each case being given to a legally qualified man. The clinical clerks—three to each physician, and two to each assistant-physician, and the dressers—three to each surgeon and assistant-surgeon, and also two clinical clerks to the physician-accoucheur, are appointed for periods of four months. Pathological assistants, who assist at the *post mortem* examinations, are appointed each month for four months.

At *St. George's Hospital*, house-physicians and

house-surgeons are appointed half-yearly from among the perpetual pupils. The appointments are held for twelve months, with board and residence in the hospital, free of expense. Each pays a deposit of 50 guineas, which is returned if the duties of his office have been satisfactorily performed. A curator of the Pathological Museum and a medical and a surgical registrar, each with a salary of £50; an ophthalmic registrar and a microscopic pathologist, each with a salary of £25; and an obstetric assistant, with board, residence, and a salary of £100, are appointed annually. An assistant house-physician, an assistant house-surgeon, an ophthalmic assistant, two assistant medical registrars, and an assistant surgical registrar, are appointed every six months. Clinical clerks and dressers are also appointed.

At *Guy's Hospital*, there are appointed during the year 6 senior and 6 junior house-physicians, 6 senior and 6 junior house-surgeons, 12 senior and 12 junior obstetric residents, 24 surgeons' dressers, 18 clinical assistants, 18 dressers in the eye wards, 24 *post-mortem* clerks, 24 obstetric out-patient clerks, 32 assistant physicians' clerks, 12 dental surgeons' dressers, 12 aural surgeons' dressers, 64 medical clinical clerks, 72 or more assistant-surgeons' dressers and dressers in the surgery, 12 obstetric ward clerks, 80 surgical clinical clerks, 32 assistant-surgeons' clerks, 60 extern obstetric assisants, and clerks in the room for applying electricity. All students have opportunities of becoming clinical ward clerks to the physicians and surgeons, as well as dressers to the assistant-surgeons, and dressers in the surgery; and the diligence with which they perform the duties of these offices is an important test of their fitness for the higher posts.

At King's College Hospital, a physician's assistant, house-surgeons, a physician-accoucheur's assistant, clinical clerks, and dressers, are chosen by examination from matriculated students of the College who are pupils at the hospital.

At the *London Hospital*, every student is expected to act as clinical clerk to the medical out-patients for six weeks in his second year, and to dress for three months in the surgical out-patient department; also to act as *post-mortem* clerk for three months. The following appointments are also made: five house-physicians (qualified for registration) every six months; clinical clerks (open to all full pupils) every three months; a resident accoucheur (qualified) every six months; clinical obstetric clerks every three months in the in-patient, and every six weeks in the out-patient department; five house-surgeons, for six months (each being provided with board and residence); surgical dressers every three months; three clinical assistants (each with a salary at the rate of £80 *per annum*); a medical and a surgical registrar (each with £100 *per annum*); a dental assistant, ophthalmic and aural dressers, and *post-mortem* clerks.

At *St. Mary's Hospital*, four resident medical officers are appointed for twelve months, and a resident obstetric officer for six months. They all reside in the hospital, free of expense. All students are required to perform the duties of clinical clerk and dresser for eight months after passing the primary examination. Students of the third year are expected to assist in the out-patient department for three months.

At the *Middlesex Hospital*, two house-surgeons, six resident physicians' assistants, and a resident obstetric physician's assistant are appointed by competitive examination. They pay on appointment, fees varying from ten to twenty guineas, according to circumstances. The appointments of clinical clerks and dressers are so arranged that every student may, at some period of his attendance on hospital practice, hold both a clerkship and a dressership. Obstetric physician's clerks and ophthalmic dressers are appointed.

At *St. Thomas's Hospital*, two resident and one non-resident house-physicians, an assistant house-physician, two house-surgeons, an assistant house-surgeon, and a resident accoucheur, are selected every three months from gentlemen who have obtained professional diplomas. An ophthalmic clinical assistant is also appointed with a salary of £50 per annum for six months. Clinical clerks and dressers to in-patients are selected from pupils, to the number in all of at least 100 each year; and clinical clerks and dressers to out-patients to the number of 80 or 100 each year. Two registrars, at an annual salary of £100 each, are appointed each year. There are also numerous minor appointments of anatomical assistants, prosectors, obstetric clerk, etc., open to all students.

In *University College Hospital*, eight house-physicians, six house-surgeons, and four obstetric assistants, are selected annually by examination from among the senior students. They reside in the hospital, paying for their board. Out-patient physicians', and surgeons' assistants, clinical clerks, surgeons' dressers, and ophthalmic surgeon's assistants, are selected from among the pupils who are also students of the College.

At the *Westminster Hospital*, a curator of the museum, and pathologist, with a salary of £52 10s., and a medical and a surgical registrar, each with a salary of £40, are appointed annually. Two house-physicians, a house-surgeon, and a resident obstetric assistant, are appointed by examination for six months; they are provided with board and rooms in the hospital, and the senior house-physician, as chloroformist, receives and additional honorarium of £21. An assistant house-surgeon is appointed by examination. Clinical assistants to the assistant-physicians and assistant-surgeons, and to the officers in charge of special departments are appointed from among the most advanced students of the fourth year. Every student must act as out-patient dresser during three months in his first year, and afterwards hold the office of in-patient dresser and clinical clerk during a period of three months each.

In the *Birmingham General Hospital*, a resident medical and a resident surgical assistant, and two resident dressers, are appointed, each for six months.

At the *Queen's Hospital, Birmingham*, a resident obstetric assistant is appointed every six months and a resident dresser every three months.

At the *Bristol Royal Infirmary*, students are appointed to clinical clerkships in their third and fourth years. Surgeons' dressers are appointed after the first year of study, and, when sufficiently qualified, reside in the hospital in weekly rotation, and act under the supervision of the house-surgeon. The dressers and clinical clerks pay fees in addition to those for hospital practice; the former £5 5s. for each six months, the latter £5 5s. for six months, or £8 8s. for a year. Obstetric clerks pay £3 3s. for three months. A pathological clerk is appointed every four months.

At the *Bristol General Hospital*, clinical clerks, dressers, and obstetric clerks are appointed. The clinical clerks and dressers pay each an extra fee of £5 5s. for six months; and the obstetric clerks

£3 3s. for three months. The dressers reside in the hospital in rotation, free of expense.

In the *Leeds General Infirmary*, all students must hold the office of clinical clerk and dresser. A house-physician and house-surgeon are elected from time to time. There are four resident assistants; two are elected every six months, and hold office for one year.

At the *Liverpool Royal Infirmary*, two house-physicians and three house-surgeons are selected (by competitive examination if necessary) from pupils of the school who have obtained a legal qualification to practice; they hold office for six months. Three clinical clerks are appointed to each physician, and three or more dressers to each surgeon, and two clerks to the wards for special diseases of women; they hold office for three months. *Post mortem* clerks are appointed for periods of six weeks. This appointment is required to be held by every student.

At the *Manchester Royal Infirmary*, a registrar, a pathological registrar, and two assistant medical officers, are appointed annually, each with a salary of £100. The following resident medical officers are appointed: at Infirmary, for two years, salary, £250 *per annum;* at Cheadle Lunatic Asylum, for one year, £150 *per annum;* at Monsall Fever Hospital, for one year, £200 *per annum*. A resident surgical officer is appointed annually, and receives £150. Eight house-surgeons, and four house-physicians are appointed in each year. An assistant to the resident medical officer at Monsall, and one at Cheadle, are appointed every six months. House-surgeons must possess registrable qualifications. Two or more clinical clerks are attached to each physician and assistant-physician, and two or more dressers to each surgeon and assistant-surgeon; two clerks are also appointed to the pathological registrar and to each of the assistant medical officers. They hold these for three months. Accident-room dressers are also appointed monthly, for two months.

In the *Newcastle-on-Tyne Infirmary*, four times in the year, two resident medical assistants, two resident surgical assistants, three non-resident clinical clerks, and sixteen dressers, are appointed for three months. Assistants in the pathological department and to the dental surgeon are also appointed.

In the *Edinburgh Royal Infirmary*, resident physicians and resident surgeons are appointed for six months. Clinical clerks are also appointed; and each surgeon appoints several dressers for six months. There are also assistants in the pathological department.

In the *Glasgow Royal Infirmary*, five physicians' and five surgeons' assistants are boarded and lodged in the Hospital at the rate of £25 *per annum*. The appointments can be held for twelve months, six in the medical and six in the surgical wards. These appointments are open to students who have passed all their examinations except the last, or to qualified gentlemen. There are also numerous clerkships and dresserships.

TUTORIAL INSTRUCTION.—In addition to the ordinary courses of lectures and hospital practice, and practical instruction, many of the medical schools have an officer whose special duty it is to direct the pupils in their studies, and to hold classes for the guidance of those who are about to present themselves for examination before the licensing boards.

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.—In addition to the rewards for diligence in professional study, many of the medical schools offer yearly one or more scholarships, usually in general literature, and in some instances in science. The competition is open to gentlemen about to commence their hospital studies; and the successful candidate is expected to enter as a pupil of the school in which the examination has been passed. In the examination in general literature, the subjects are usually those of preliminary education as defined by the General Medical Council, or of the Matriculation Examination of the University of London. In the Science scholarships, the usual subjects are Chemistry, Botany, and Zoology. The yearly value of the scholarships and exhibitions varies from £100 to £10.

There are also many scholarships and exhibitions, varying in value from £100 to £20, open to students during their period of professional study, or (as at St. George's Hospital) within a limited time after they have passed their final examinations for licences to practise. These exhibitions are in some cases (as at St. Bartholomew's and the London Hospitals) awarded after examination in subjects of preliminary education; but in most of the schools they are given after examination in groups of subjects of professional education, elementary or practical.

Special rewards are also offered in many of the schools for evidence of proficiency in clinical observation.

For further information respecting the scholarships and exhibitions, and regarding the class prizes, as well as for many details which we are obliged to omit, our readers must consult the prospectuses of the schools and our advertising columns.

FRANCE.

GRADUATION IN MEDICINE.

THE Degree of Doctor in Medicine of the University of France is conferred by the Faculties of Paris, Montpellier, Nancy, Bordeaux, Lille, and Lyons, under regulations laid down by the Government.

1. The studies necessary for obtaining the degree last four years; during the first three years they may be carried on either in the Faculties, in the *Ecoles de plein exercice*, or in the preparatory schools of medicine and pharmacy. The studies of the fourth year can only be made in a Faculty or in an *Ecole de plein exercice*.

2. Candidates must produce, when they take the first inscription, the diploma of Bachelor of Sciences, limited as regards the mathematical part. They must undergo five examinations and defend a thesis. The second, third, and fifth examinations are each divided into two parts.

3. The five examinations are as follow. *First Examination:* Physics, chemistry, medical natural history. *Second Examination:* First part, anatomy and histology; second part, physiology. *Third Examination:* First part, external pathology (surgery), midwifery, operative surgery; second part, internal pathology (medicine), general pathology. *Fourth Examination:* Hygiene, legal medicine, therapeutics, materia medica, and pharmacology. *Fifth Examination:* First part, clinical surgery and obstetrics; second part, clinical medicine, practical demonstrations in pathological anatomy; and a thesis on a subject chosen by the candidate.

4. The first examination takes place after the fourth inscription and before the fifth; the first part of the second examination, after the tenth inscription, and before the twelfth; and the second part after the twelfth inscription and before the fourteenth. The third examination cannot be passed until the end of the sixth *trimestre* of study. Any candidate who does not pass the first examination in November, at the latest, will be put back to the end of the scholastic year, and will not be permitted to take out any inscription during the course of that year.

5. Candidates for the doctorate, pupils of *écoles de plein exercice* or of the preparatory schools, are examined by the Faculties at the periods fixed in the preceding article. They may, however, defer the first examination until after the twelfth inscription. In that case they must pass the second examination before the thirteenth inscription, and, from the commencement of the second year of study, are subjected to interrogations at the end of each six months, the results of which are transmitted to the Faculties, to be taken into account in the examinations for the doctorate.

6. The inscriptions for *officier de santé* cannot be converted into inscriptions for the doctorate, in the case of pupils actually studying; but this conversion may be permitted in the case of *officiers de santé* who have practised medicine for at least two years.

7. Practical work in the laboratory, dissection, and residence near the hospitals, are obligatory. Each annual period of laboratory work and dissection comprises a six months' course, or *semestre*. Residence near the hospitals must not continue less than two years.

8. The fees to be paid by candidates for the degree of Doctor in Medicine are fixed as follows.

Sixteen inscriptions at 32 *francs* 50 *centimes* each	520 *francs*.	
Eight examinations at 30 *francs* ...	240	„
Eight certificates of proficiency at 25 *francs*	200	„
Expenses of materials for practical study, first year, 60 *francs*; second and third years, each 40 *francs*; fourth year, 20 *francs*	160	„
Thesis	100	„
Certificate of proficiency	40	„
Diploma	100	„
Total	1,360	„

9. Every candidate, who, without an excuse admitted by the jury, does not answer when his name is called, on the day of which notice has been given to him, is set back for three months, and forfeits the fees which he has paid.

10. The fees paid by the pupils of the Faculties go to the public treasury. The fees paid for inscriptions and for practical work by the pupils of the *écoles de plein exercice* and the preparatory schools go to the municipal treasuries.

A foreigner holding medical qualifications to practise medicine, if desirous of obtaining the degree of the University of France, must show to the Minister of Public Instruction his diploma, and the certificates of the course of study which he has undergone in his own University or Medical School. The Minister, if satisfied, will authorise the candidate to present himself for the five final examinations. These are conducted in the French language. The fees are as follows: each examination 90 *francs* = 450 *francs*; thesis, 240 *francs*; fifteen inscriptions, 520 *francs*; three *examens de fin d'année*, 90 *francs*; diplomas of *bachelier ès lettres et ès sciences*, 100 *francs*; in all, 1,400 *francs*. The candidate has to pay all the fees, although exempted from the necessity of passing the preliminary examinations, and those for the *bachelier ès lettres et ès sciences*.

MEDICAL EDUCATION.

Medical Education in France is under the control of the State, and is given in the Faculties of Medicine and Pharmacy, the Écoles de Plein Exercice, and the Preparatory Schools of Medicine and Pharmacy.

The Faculties are six in number: three—those of Paris, Montpellier, and Nancy, are composed of two distinct schools of Medicine and Pharmacy; the others, at Bordeaux, Lille, and Lyons, are called mixed Faculties of Medicine and Pharmacy. They confer, besides the same diplomas and certificates as the other schools, the diplomas of doctor in medicine and *pharmacien* and midwife of the first class.

There are two *écoles de plein exercice*, viz., at Nantes and at Marseilles. They are entitled to give the same certificates as the preparatory schools; but candidates for the doctorate may take out sixteen inscriptions in them.

The Preparatory Schools are entitled to give diplomas or certificates of *Officier de santé* and *Pharmacien*, herbalist, or midwife, of the second class. Candidates for the doctorate can study in them three years, and take out twelve inscriptions. There are preparatory schools at Algiers, Amiens, Angers, Arras, Caen, Clermont, Ferrand, Dijon, Grenoble, Limoges, Poitiers, Reims, Rennes, Rouen, Toulouse, and Tours.

Faculty of Medicine in Paris.

The School of Medicine in Paris is open to all who wish to attend the courses and take degrees. Great facilities are afforded to British and foreign students for the prosecution of their studies, all lectures being given gratuitously, and no payment being required for hospital attendance. For dissections, however, a payment of 30 *francs* or more is expected from each student.

The medical sessions begin for winter on October 15th, and for summer on April 15th of each year.

The instruction in the Faculty of Medicine in Paris is given by the following professors: M. Sappey, Anatomy; M. Robin, Histology; M. Béclard and M. Richet (*agrégé*), Physiology; M. Wurtz and M. Henninger (*agrégé*), Medical Chemistry; M. Baillon and M. de Lanessan (*agrégé*) Natural History; M. Gavarret and M. Gariel, Medical Physics; M. Regnauld, Pharmacology; M. Jaccoud, M. Peter, and M. Dieulafoy (*agrégé*), Internal Pathology or Medicine; M. Trélat and M. Berger (*agrégé*), External Pathology or Surgery; M. Guyon, Surgical Pathology; M. Le Fort, Practical Surgery; M. Hayem, Materia Medica and Therapeutics; M. Charcot and M. Ollivier (*agrégé*), Pathological Anatomy; M. Pajot and M. Pinard (*agrégé*), Midwifery; M. Bouchardat, Hygiene; M. Brouardel, Forensic Medicine; M. Bouchard, General Pathology and Therapeutics; M. Vulpian, Comparative and Experimental Pathology; MM. G. Sée, Lasègue, Mardy, Potain, Clinical Medicine; MM. Gosselin, Richet, Verneuil, Trélat, Clinical Surgery; M. Depaul, Clinical Midwifery; M. Panas, Clinical Ophthalmology; M. Parrot, Diseases of Children; M.

Laboulbène, History of Medicine; M. Ball, Diseases of the Mind and Nervous System. Supplementary courses are also given on Diseases of the Skin, Diseases of Children, Venereal Diseases (M. Fournier).

The Faculty of Medicine possesses laboratories for Anatomy (Professor Sappey), Operative Surgery (Professor Le Fort), Physics (Professor Gavarret), Chemistry (Professor Wurtz), Biological Chemistry (Professor Wurtz), Practical Forensic Medicine (Professor Brouardel), Botany (Professor Baillon), and Teratology (Director, M. Dareste), Normal Histology (Director, M. Ch. Robin), Physiology (Professor Béclard) Pathological Anatomy (Professor Charcot), Experimental and Comparative Pathology (Professor Vulpian), Therapeutics (Professor Hayem), Pharmacology (Professor Regnauld).

In consequence of limited accommodation and restricted pecuniary means, these laboratories are, as a rule, incapable of being so useful as such institutions might be expected to be. It is found necessary to limit their use to medical men and to students who are pursuing researches for some definite purpose, such as the preparation of their theses. No payment is required; the demonstrators (*préparateurs*) aid with advice; the apparatus is at the disposal of the workers in the laboratories, but they generally have to pay for any animals or other objects which they may require.

Every student is required to go through courses of practical instruction (*travaux pratiques*) as follows: first year, physics, chemistry, and natural history; second and third years, anatomy, physiology, and histology; fourth year, practical surgery and pathological anatomy.

Attached to the Faculty of Medicine are the Botanical Gardens and Museum of Natural History; the Orfila Museum of Anatomy and Zoology, at the Ecole de Médecine; the Depuytren Museum of Pathological Anatomy, in the Ecole Pratique; and the Library.

The prizes of the Faculty of Medicine are the following. The Corvisart prize, a gold medal of the value of 400 *francs* (£16) is offered for competition to all pupils of the Faculty who have also entered to one of the internal clinics. The subject is some question in medicine, the answer to which must be derived exclusively from the facts observed in hospital practice. The Monthyon prize, consisting of 700 *francs* (£28), is awarded to the author of the best essay on the prevalent diseases of the preceding year, their characters, symptoms, and treatment. The Barbier prize of 2,000 *francs* (£80) is offered annually to the inventor of an operation, or of instruments, bandages, etc., of general utility and superior to anything of the kind that has been already in use. The Chateauvillard prize, also of 2,000 *francs*, is awarded yearly to the author of the best work on the medical sciences, printed between January 1 and December 31 in the preceding year. The works sent for competition must be in French. Graduation theses are admitted. An annual sum of 1,000 *francs* (£40) is awarded, under the will of the late Baron de Frémont, to a meritorious but poor student. An annual revenue of 3,000 *francs*, bequeathed by Madame de Barkow, is applied to a similar purpose in the superior educational establishments in Paris. The Lacaze prize of 10,000 *francs* (£400) is offered biennially for the best essay on phthisis or on typhoid fever—the subjects being taken alternately. After the examination of the theses, the Faculty names to the Minister of Public Instruction the candidates worthy of special distinction, in the form of silver medals, bronze medals, and honourable mention. Bursaries of the value of 1,200 *francs* are awarded after competition. Each bursary is tenable for one year; and the holder, if desirous of its renewal, must again compete. Candidates must be natives of France, at least eighteen years of age.

The College of France.

In this institution, the following courses of instruction on sciences allied to medicine are given, viz., Experimental Medicine, by Dr. Brown-Séquard; General Anatomy, by M. Ranvier; Natural History of Organised Bodies, by M. Marey; Comparative Embryogeny, by M. Balbiani; Organic Chemistry, by M. Berthelot; Mineral Chemistry, by M. Schutzenberger; Physics, by M. Mascart; Natural History of Inorganic Bodies, by M. Fouqué; General Physics, by M. Bertrand. The Histological Laboratory is under the direction of M. Ranvier and M. Malassez, and is specially intended for the use of persons desirous of making original researches. The Physiological Laboratory, directed by Professor Marey and M. François Franck, is open to persons who enter their names for the purpose with the secretary of the Faculty of Sciences, and who have a sufficient knowledge of physiology to enable them to undertake experimental research. The researches may have reference to any department of physiology; but special attention is paid in this laboratory by the phenomena of motion, and their registration by suitable apparatus.

Free Medical Instruction.

In addition to the professors in the Faculty of Medicine, there are a number of lecturers whose instruction is recognised. Among them are, MM. Lenoir and Fort, for Anatomy; M. François Franck, for Physiology and Pathology; M. Dareste, for Embryology and Teratogeny; Dr. Latteux, for Histology and the Use of the Microscope; MM. Moutard-Martin, Hanot, Barié, Cuffer, du Castel, Lorey, and Muselier, for Internal Pathology; MM. Duret and Schwartz, for External Pathology; MM. Ribemont, Champetier de Ribes, and Porak, for Midwifery; MM. de Sinéty, Chéron, and Berrut, for Diseases of Women; MM. Abadie, Carré, Coursserant, Desmarres, Fano, Galezowski, Meyer, Parinaud, and Gorecki, for Diseases of the Eyes; MM. Fauvel and Cadier, for Laryngoscopy; M. Gellé, for Diseases of the Ears; MM. Reliquet, Mallez, Picard, Debuc, and Langlebert, for Diseases of the Urinary Passages; MM. Apostoli and Tripier, for Medical Electricity.

The Hospitals of Paris.

Pupils of the Faculty of Medicine in Paris attend, without payment, the practice of any of the hospitals which they may select. The visits of the physicians and surgeons are generally made at an early hour—8 or 9 A.M. The following is a list of these institutions:

Hôtel Dieu, Parvis Nôtre Dame.—530 beds. *Physicians:* Drs. G. Sée, Hérard, Oulmont, Frémy, Moutard-Martin, and Empis; *Surgeons:* MM. Richet, Cusco, and Panas (Diseases of the Eye). The hospital possesses laboratories for histology, chemistry, and physiology; also a library for the use of the *internes*.

Hôpital des Cliniques, 13, Rue Monsieur-le-Prince; for Midwifery, 89, Rue d'Assas.—128 beds. *Physician Accoucheur:* Dr. Depaul; *Superintendent of Clinic:* M. Ribemont. Students are only admitted

to the obstetric department of this hospital when provided with a card, which is obtained from the Secretary of the Faculty of Medicine, after passing the second examination for the doctorate.

Hôpital de la Charité, 47, Rue Jacob.—504 beds. *Professor of Clinical Medicine:* M. Hardy; *Professor of Clinical Surgery*, M. Gosselin; *Physicians:* Drs. Reynaud, Vulpian, Laboulbène, Desnos, and Bernutz (Obstetric). The library of this hospital contains a large number of works in anatomy, physiology, medicine, and surgery, including numerous theses.

Hôpital de la Pitié, 1, Rue Lacépède.—709 beds. *Physicians:* Drs. Lancereaux, Gallard, Peter, Dumontpallier, Lasègue, and Brouardel; *Surgeons:* MM. Verneuil and Polaillon.

Hôpital Lariboisière, Rue Ambroise Paré.—706 beds. *Physicians:* Drs. Fernet, Jaccoud, Bouchard, C. Paul, Proust, and Siredey: *Surgeons:* MM. Duplay (Diseases of the Eye) and Labbé. Besides the ordinary clinical instruction, instruction is also given in ophthalmic surgery and diseases of the larynx.

Hôpital Saint-Antoine, 184, Rue de Faubourg Saint-Antoine.—647 beds. *Physicians:* Drs. Mesnet, Dujardin-Beaumetz, Rigal, Cornil, Hayem, d'Heilly, and Duguet; *Surgeons:* MM. B. Anger and Périer.

Hôpital Necker, 151, Rue de Sèvres.—418 beds. *Physicians:* Drs. Potain, Blachet, and Ollivier; *Surgeons:* MM. Trélat and Guyon. The Civiale museum, containing numerous calculi and specimens of diseases of the urinary organs, is attached to the hospital.

Hôpital Beaujon, 208, Faubourg Saint-Honoré.—422 beds. *Physicians:* Drs. Millard, Guyot, Gombault, and Féréol; *Surgeons:* MM. Le Fort and Tillaux. The hospital possesses a library containing 200 volumes, and a large number of theses.

Hôpital Cochin, 17, Faubourg Saint-Jacques.—249 beds. *Physician:* Dr. Bucquoy; *Surgeon:* M. Desprès; *Obstetric Surgeon:* M. Lucas-Championnière. An obstetric department is attached to this hospital; but only a limited number of students are admitted to the morning visit.

Hôpital Laennec, 42, Rue de Sèvres.—580 beds. *Physicians:* Drs. Ball, Damaschino, Ferrand, and Legroux; *Surgeon:* M. Nicaise.

Hospice de la Salpêtrière, Boulevard de l'Hôpital.—3,069 beds for old persons, and 662 for female lunatics. *Physicians:* Drs. Charcot and Luys; *Surgeon:* M. Terrier; *Physicians to the Lunatic Department:* Drs. Legrand du Saulle, Moreau, and A. Voisin. There is a medical library, founded and supported by the *internes;* it contains more than 1,500 volumes. M. Charcot, one of the physicians, gives a course of instruction on diseases of the nervous system; and MM. Luys and Voisin give courses of mental pathology.

Hospice de Bicêtre.—1,794 beds for old persons, and 540 for male lunatics. There is also a small accident ward of twelve beds. *Physician:* Dr. Debove; *Surgeon:* M. Gillette; *Physicians to the Lunatic Department:* Drs. Falret, J. Voisin, and Bourneville. The library, which was founded in 1865, contains about 2,000 volumes.

Hôpital des Enfants Malades, 149, Rue de Sèvres.—518 beds. *Physicians:* Drs. Archambault, Bouchut, and Labric (for acute diseases), Simon, and Descroizelles (chronic diseases); *Surgeon:* M. de Saint-Germain. There are wards for acute and chronic diseases, small-pox, and diseases of the eye.

Hôpital Sainte-Eugénie, 89, Rue de Charenton.—427 beds. *Physicians:* Drs. Bergeron, Triboulet, Cadet de Gassicourt; *Surgeon:* M. Lannelongue.

Hôpital Saint-Louis, 40, Rue Bichart.—823 beds; of which 637 are occupied with cases of skin-disease, 28 with obstetric cases, and the rest with surgical cases. *Physicians:* Drs. Hillairet, Lailler, Vidal, Guibout, Besnier, and Fournier; *Surgeons:* MM. Péan and Le Dentu. General medicine is not taught in this hospital, but there are ample means for the special study of diseases of the skin, on which courses of theoretical and practical lectures are delivered. A museum containing several hundred models and drawings illustrating diseases of the skin; to which is added M. Fournier's collection of illustrations of venereal diseases. The hospital is also rich in surgical cases.

Hôpital du Midi, 111, Boulevard du Port-Royal.—336 beds, devoted exclusively to the reception of cases of venereal disease. *Physicians:* Drs. Simonet and Mauriac; *Surgeon:* M. Horteloup.

Hôpital de Lourcine, 111, Rue de Lourcine.—243 beds. *Physicians:* Drs. Gougenheim and Martineau; *Surgeon:* M. Terrillon. Students are admitted to the hospital by special ticket.

Hôpital Tenon, Rue de la Chine.—635 beds. Besides these, 190 beds can be added in cases of epidemics, etc. *Physicians:* Drs. Gérin-Roze, Hallopeau, Grancher, Dieulafoy, Straus, and Rendu; *Surgeons:* MM. T. Anger and Delens.

Maison d'Accouchement, 121, Boulevard du Port-Royal.—316 beds. *Physician:* Dr. Hervieux; *Surgeon:* M. Tarnier; *Assistant-Surgeon:* M. Lucas-Championnière. The hospital is employed exclusively for the education of midwives, and is not open to students of medicine. Attached to the hospital is a school for midwives.

Hospital Appointments in Paris: Concours.

The medical staff of each hospital in Paris consists of—1. Physicians and Surgeons; 2. Prosectors; 3. *Internes* and *Externes* in Medicine and in Surgery; 4. *Pharmaciens;* 5. *Internes* in Pharmacy.

All the appointments in the hospitals of Paris are obtained by *concours;* and, when vacant, are eagerly competed for.

Each medical service is under the direction of a physician, and comprises also an *interne* and three or four *externes*. The organisation of the surgical departments is similar; but the number of pupils is greater, and there are generally two or three *internes* and five or six *externes*.

The chief of the medical staff, physician or surgeon, receives annually a sum of 1,200 *francs* (£48) in the central hospitals, and 1,500 *francs* (£60) in the more distant ones. The physicians retire from hospital duty at the age of 65, and the surgeons at 63. When first nominated, they have to attend the consultations at the central bureau, and to do duty for any of the hospital physicians and surgeons that may be absent. As vacancies occur in the hospitals, they receive appointments in the order of their nomination.

The *internes* and *externes* are nominated by *concours* for four years, and receive 500 *francs per annum* for the first two years, 600 *francs* the third year, and 700 *francs* the fourth year. Some of them are also provided with lodging, fire, and light; others receive 400 *francs* yearly in lieu of lodging.

The *interne* is the most direct assistant of the hospital physician or surgeon; he accompanies him in his morning visit, and himself visits the patients in

the evening. The *internes* remain on duty in turn, to attend to urgent accidents and cases of illness.

In November, the *internes* are invited to compete for prizes. To those of the first and second years are offered a silver medal, books, and two certificates of honour. Those of the third and fourth years compete for a gold medal, a silver medal, and two certificates of honour. The successful candidate for the gold medal is entitled to two additional years of *internat*.

Those candidates who are placed in the first list at the *concours*, but do not succeed in getting appointments, are termed provisional *internes*, and fill the places of those who are absent. They have, however, to compete again at the end of the year, if they desire to receive appointments.

The *externes*, who are appointed for three years, have to take records of cases, either alone or under the direction of the *internes*, to assist the latter in dressing difficult cases, and to dress the minor cases. The *externes* at the central hospitals are not paid; at those more distant from the centre of the city, they receive 300 *francs* yearly; at others more distant, one *franc* daily; at the Maison de Santé, 300 *francs* yearly, and 300 *francs* for expenses; at the Tenon Hospital, 50 *francs* monthly.

The *concours* for the *external* generally commences early in October, and continues until the end of December. Candidates must not be under 18, nor above 26 years of age. They must produce—1. A register of birth; 2. A certificate of vaccination; 3. A certificate of good conduct signed by the mayor of the commune in which the candidate is domiciled; 4. A certificate of at least one inscription in the Faculty of Medicine. The examination consists in—1. An oral description of some subject in descriptive anatomy; 2. A similar description of some elementary subject in pathology or minor surgery. For each five minutes are allowed, after five minutes of reflection. The maximum number of marks that can be gained by a candidate is 20 for each examination. The examination is conducted by four physicians and three surgeons of the central bureau, generally from those most recently appointed.

The *concours* for the *internat* takes place nearly at the same time as that for the *external*. Candidates must not be more than 28 years old, and must produce certificate of having performed the duties of *externe*, at least from the first day of the preceding January, without interruption (unless this have been unavoidable); also certificates from the physicians and surgeons and the directors of the hospitals in which they have performed the duties of *externe*, testifying to their punctuality, obedience, and good conduct. The examination commences with a written essay on some subject in anatomy and medical or surgical pathology, for which two hours are allowed. This is followed by an oral examination in the same subjects; ten minutes being allowed for each answer after ten minutes of consideration. The maximum of marks obtainable for the written examination is 30; for the oral 20. After this the candidates are classified.

At the end of the *concours*, the candidates are classified according to the number of marks; and the 35 or 40 first on the list are nominated *internes*.

The first four candidates on the list are the successful candidates for the prize for *externes*, the examination for which is the same as that for the *internat*. The first receives a case of instruments of the value of 300 *francs*, and has, during his first year, the sum of 800 *francs* in addition to the payment which he receives in common with the other *internes*. The first and second candidates are also presented with books.

The prizes offered to the *internes* are competed for in the beginning of November. The examination consists in—1. A written composition, for which two hours are allowed, bearing on anatomy, physiology, and pathology; 2. An oral description of some subject in external pathology; 3. A similar description of some subject in internal pathology (for each of these ten minutes are allowed); 4. *Internes* of the third and fourth years must also have sent in, before August 15, an original essay on some subject selected by them; this is generally based on observations made in the hospital.

The Civiale prize, of the value of 1,000 *francs*, is given every second year to the best essay by an *interne* on duty on some point in the pathology of the genito-urinary passages.

The *concours* at the Bureau central for the office of physician consists of five examinations. 1. The candidate gives a lecture for a quarter of an hour on a patient, for whose examination ten minutes are allowed. 2. A lecture of twenty minutes' duration, after twenty minutes' reflection, on some subject in medicine. 3. A written consultation on a medical case; ten minutes being allowed for examining the patient, and three-fourths of an hour for writing out the consultation. To each of these examinations a maximum of 20 marks is allotted. During these three examinations, a process of elimination takes place, so that at last there remain five candidates for one place, eight for two, and ten for three places. These are then further subjected to the following tests: 1. A written composition for which three hours are allowed, on some subject in medicine, which must comprise a question in pathological anatomy; 2. A lecture of thirty minutes' duration on two patients, twenty minutes being allowed for examining them.

In the *concours* for the office of surgeon, the examinations are nearly the same; there is, in addition, an examination in operative surgery, and the candidate has to lecture on one subject instead of two.

Medical Service of the French Army.

Candidates for admission to the French medical service are chosen yearly by *concours*, in numbers proportioned to the demands of the service. They are distributed, at their own option and convenience, among the towns which possess military hospitals or wards for soldiers in civil hospitals, and have also a school of medicine; viz., Paris, Lille, Nancy, Lyons, Marseilles, Montpellier, Toulouse, Bordeaux, Nantes, Rennes, and Algiers: and *concours* are held at each of the places, for admission of pupils in medicine and pupils in pharmacy.

The following classes of candidates are admitted as pupils in medicine: 1. Students having eight, twelve, or sixteen inscriptions for the doctorate, and having passed the corresponding examinations: 2. Doctors in medicine. They must be born or naturalised Frenchmen, and must not have exceeded, on January 1st of the year in which the *concours* takes place, 23 years of age in the case of students with eight inscriptions, 24 years in the case of students with twelve, 25 years in the case of students with sixteen inscriptions, and 26 years in the case of doctors of medicine. They must be certified as fit for service by an army medical officer holding the rank of surgeon-major or a higher rank, and, if necessary, their fitness may be verified by an ex-

amining board; and they must engage on honour to serve at least ten years from the date of appointment of *aide-major* of the second class. Candidates must make applications for admission on a form to be obtained at the offices of the military intendants resident in the places above mentioned.

The subjects of the examinations at the *concours* are as follows. For candidates with eight inscriptions: 1. A written composition on a question of physiology; 2. Questions on descriptive anatomy and physiology. For candidates with twelve inscriptions: 1. A composition on a subject in general pathology; 2. Questions in internal and external pathology: 3. Questions on anatomy and psychology. For candidates with sixteen inscriptions: 1. A written composition on a question in medical pathology and therapeutics; 2. Questions on external pathology and operative surgery; 3. Questions on internal pathology, hygiene, and therapeutics. For doctors in medicine: 1. A written composition on a subject in general pathology; 2. An oral examination on regional anatomy and its applications to medicine and surgery; 3. Clinical examination of two patients. The examinations are conducted by a board, consisting of a medical inspector as president, a professor and an *agrégé* professor in the School of Military Medicine and Pharmacy, and the professor of applied chemistry in the school, together with a *pharmacien-major* of the first class. Three hours are allowed for writing the essay; and each series of questions occupies twenty minutes.

Having passed a satisfactory examination, the candidates are attached to the military hospitals or wards in the town, and are subject to certain disciplinary rules with the object of regulating their studies. They do not wear uniform. Each candidate is allowed, for two years at most, from the time of his thirteenth inscription, a sum of 1,200 *francs* (£48) *per annum*, to pay for maintenance, books, and instruments. Those alone who have been bursars in the military Prytaneum are allowed, from the time of their admission as pupils in the military medical service, a monthly allowance of 1,200 *francs* in Paris, 1,000 *francs* in Lyons and Marseilles, and 800 *francs* in the other towns.

In case of rejection, the fees for admission to a second examination must be paid by the candidate; and no one is admitted after a second rejection. Permission to study during an additional year is granted only when the pupil has been prevented by illness during at least two months in the year from following his studies.

Doctors of medicine, who have passed the required examinations, are admitted to the School of Military Medicine and Pharmacy, Val-de-Grâce, with the title of *médecin stagiaire*. The instruction given to them in the school is essentially practical, and has special reference to the requirements of military service. They are allowed 2,800 *francs* (£112) yearly, and wear uniform. They attend the school of Val-de-Grâce in Paris during at least eight months; and, if found qualified on examination, receive the rank of *aide-major* of the second class.

Naval Medical Schools.

For the purpose of training medical officers for the navy, there are three schools: Brest, Rochefort, and Toulon.

GERMANY.

GRADUATION IN MEDICINE.

In the German Empire there are twenty Universities which possess a Medical Faculty and grant degrees in Medicine; viz., those of Berlin, Bonn, Breslau, Erlangen, Freiburg im Breisgau, Giessen, Göttingen, Greifswald, Halle, Heidelberg, Jena, Kiel, Königsberg, Leipzig, Marburg, Munich, Rostock, Strasburg, Tubingen, and Wurzburg.

No one can legally practise Medicine in this empire unless he have passed the Staats-Examen Board. The law forbids anyone to call himself *Arzt* (Physician) unless he have passed the State Board; or Doctor, unless he have passed the examinations at some University, and thereby acquired the degree. The doctor who has not passed the State Board is not a licensed physician, and may hold no appointment; and if he practise, he has no power or right to insist on payment of his services. The practitioner who is neither doctor nor physician, if any mishap occur from his ignorance, is punished not only by fine, but by imprisonment for a period varying from six months to ten years.

The expenses of passing the State Board are less than half of those for the Faculty of an University, and the examination is more exclusively practical; hence it is selected by the poorer students who seek only a rural practice. The majority of students pass both the University and State examinations, and this is especially necessary for those who aspire to any medical office.

No medical diploma, either from an University or otherwise, can be obtained in Germany without a gymnasial certificate, to obtain which an examination must be passed at a German gymnasium (public school) in Greek, Latin, at least one Modern Language besides German, Logic, the Physical Sciences, and Mathematics. A candidate who cannot present this, or an equivalent certificate, must pass a preliminary examination in those subjects.

The number and character of professional chairs in the medical faculties vary greatly in the different Universities; but in all we find three classes of teachers, viz., professors, extraordinary or assistant professors, and *privat-docents*.

The professors are appointed for life, and at the end of thirty years' service can retire on a pension; they receive a fixed salary from the State or University—a part of the revenue derived by the medical faculty from certain fees, and their lecture fees from the students. The fixed salary is occasionally increased, according to the success and reputation of the professor. Any doctor in medicine may be a candidate for a vacant chair, the selection being made by the Minister of Public Instruction from a list of names recommended by the faculty.

The extraordinary or assistant professors are appointed in like manner from among the *privat-docents*. As a rule, their compensation comes only from students' fees, but occasionally a small fixed salary is allowed.

There are no independent schools in Germany. There is, however, little objection to free, or, as it is sometimes called, 'extramural teaching', and hence young men of ability can establish themselves as private teachers, demonstrators, etc., in the immediate vicinity of the Universities, relying on their own talents and tact to secure pupils. These are the *privat-docents*, much of whose teaching consists

in giving short courses, of from six to eight weeks' duration, on special subjects. The position of *privat-docent* is accessible to all doctors of medicine, and the number is unlimited. Their compensation is from students' fees, and they may not underbid the regular professor. At some Universities they are furnished with rooms, and given a share of the clinics; at others, they receive little or no assistance. The *privat-docents* are understood to be in training for professorships, and, if they show marked ability as teachers or as investigators, their promotion may be very rapid.

The course of study at the German Universities varies according to the requirements for the particular medical degree, but in no case is it less than three years. At some, the course extends over four years. The following lectures are the least which will be accepted by any of the University faculties, and may be taken in whatever order the student may wish. The courses occupy nine-and-a-half months in each year. For one year: Chemistry, six hours weekly; Physics, four hours weekly; Zoology and Comparative Anatomy, three hours weekly; Botany, three hours weekly; Mineralogy and Geology, two hours weekly; Anatomy, Histology, and Preparation of Specimens, ten hours weekly; Physiology and Laboratory Work, eight hours weekly; General Pathology, Pathological Anatomy, and Practical Work, six hours weekly; Pharmacology and Toxicology, two hours weekly. For two years: Special Pathology and Medical Clinic at Hospital, ten hours weekly; General and Special Surgery, Hospital Clinics, and Operating, ten hours weekly for one year, or five hours weekly for two years. This course may not be taken at the same time as the previous medical course. Obstetrics and Gynæcology, with Clinics, three hours weekly for one year; Eye and Ear Clinics, Use of Ophthalmoscope, Operations, four hours weekly, for one year; Forensic Medicine, two hours weekly, for one year.

The professors receive fixed salaries, varying from £120 to £480 annually, and increased every ten years by the addition of from £20 to £50. The students' fees for the entire course vary in different schools from £36 to £52.

Regulations for the German Staats-Examen.

The examination for the licence to practise as a Physician, Surgeon, and Accoucheur, in any part of the German Empire, may be either passed before the Medical Examination Commission at Berlin, or before a Medical Examination Committee at any German University. The Examination Committees, consisting of scientifically educated professional men in all branches of the Faculty, are appointed every year by the authorised Central Board, on whose decision it depends whether the President of the Commission shall be selected from the examiners or not. The notice for examination before the superior Examination Committee must be deposited with the Minister of Medical Affairs at Berlin, and the notice for examination before an Academical Examination Committee with the acting Curator of the University chosen, or, in default of such functionary, with the nearest superior Court of the Examination Commission. To the notice for examination must be attached: 1. A certificate of having completed a course of study at a gymnasium; 2. A certificate of the full course of medical study at an University; 3. A certificate of proficiency at the Natural Science Examination of some German University; 4. Proof that the candidate has taken part and had practice for at least two terms both in Clinical Surgery and in Clinical Medicine, and in Clinical Midwifery has attended at least four separate labours; 5. A testimonial from a public vaccinator, or some other recognised medical man, that the candidate has acquired the necessary dexterity in Vaccination.

The examinations commence every year in November, and are continued beyond the middle of July in the following year.

Candidates who have not reported themselves at the latest by the end of the year, and who have not deposited the certificates required, are not admitted to examination before the November following. Exceptions to this rule can only be made under very special circumstances.

The examination is divided into five parts, viz.: 1. Anatomical, Physiological, and Pathological; 2. Surgical and Ophthalmic; 3. Medical; 4. Gynæcological; 5. *Vivâ voce*. All candidates, without exception, must pass these examinations in the above order.

In the first portion, the candidate has to write essays on the various subjects, and also to demonstrate on the dead body, and reply to questions put to him.

In the second portion, the candidate has to undergo a clinical and a technical test. The clinical part is conducted in the surgical department of a large hospital, or in the clinic of an University, and usually lasts from seven to nine days, the candidate during this period taking charge of several patients, under the supervision of one of the examiners. During this period, also, the candidate may be required to satisfy the examiners that he can operate on the dead body, and is always required to give his diagnosis in an ophthalmic case.

The third portion of the examination is devoted to medicine, and is purely clinical. The candidate is examined in a hospital or in a clinic of an University, and is required to write prescriptions, and to give his opinion as to the doses of certain drugs used in certain cases of sickness.

The fourth portion consists in an examination conducted in the Charity Lying-in Hospital at Berlin, or in the Lying-in Hospital of an University. The candidate has to examine cases in the presence of an examiner, and to give the diagnosis, prognosis, and treatment. He is also required to attend a case of labour in the presence of an examiner, and to write down his opinion afterwards, stating the exact presentation, etc. He is also required to undertake the treatment of cases during seven days, under the superintendence of an examiner.

The fifth portion, the *vivâ voce* examination, is conducted publicly, under the superintendence of the President of the Examination Commission, by three Commissioners. To this examination, only those candidates are admitted who have satisfactorily passed the previous portions. This examination includes General and Special Pathology, Therapeutics, Surgery, Midwifery, Pharmacy, and Hygiene. Any candidate who fails to pass these five portions of the examination twice will not be readmitted to examination.

The fee for the examination is 204 *marks* (or £10 4*s*. English money), viz.:

	£	s.	d.		Marks.
1st portion	2	6	0	=	46
2nd ,, ...	3	3	0	=	63
3rd ,, ...	1	14	0	=	34
4th ,, ...	1	4	0	=	24
5th ,, ...	0	6	0	=	6
Expenses ...	1	11	0	=	31
	£10	4	0		204

The examinations are always conducted in the German language.

UNIVERSITY OF BERLIN.*

THE conditions for promotion to the Doctorate of Medicine, Surgery, and Midwifery, at the Royal Frederick William University at Berlin, are as follows.

1. Candidates must have studied medicine at least four years in one or more Universities regularly constituted. Universities and Medical Colleges abroad are deemed equivalent to the Universities in Germany. 2. Candidates under 30 years of age who have not matriculated at this University, or who have left previously to their application for promotion, must matriculate again. This can be done free of cost. Both these and matriculated students of this University must, before making application for promotion, take out a preliminary certificate of having left, and will not receive the real certificate until after promotion. 3. The candidate has to make application to the Dean, handing in at the same time the documents mentioned under 1 and 2. He has then to pass a written and verbal preliminary examination before the Dean, before being admitted to the *examen rigorosum* before the Faculty. The verbal examination is generally conducted in German or Latin, and extends to all branches of theoretical and practical medicine. At the written examination, an *ex tempore* essay must be written, without any assistance, in a given time. 4. After the preliminary examination, the Dean lays before the Faculty the documents having reference to the personality and the course of studies of the candidate, the judgment respecting the preliminary examination, and the essay composed thereat. Should that body decide for admission, the Dean will appoint as early a time as possible for the *examen rigorosum*. 5. The *examen rigorosum* takes place before six members of the Faculty, is verbal only, and is concluded at one sitting, each of the examiners examining the candidate for a quarter of an hour. No branch of theoretical and practical medicine and surgery is excluded. It is generally held in German, but, if necessary, in Latin. From this examination no candidate can be exempted. If he be rejected, six months must elapse before re-admission. 6. After this, the candidate must present a German or Latin dissertation. The members of the Faculty are ready to advise the candidate as to the choice of a subject for his essay; but the essay must be entirely original; and the candidate must declare on oath in writing that he has composed it entirely himself. If the manuscript be pronounced good by the Faculty, the candidate will have to get printed, at his own expense (about 85 *marks*), by a certain printer, a prescribed number of copies. It must consist of at least two quires, and give evidence of a good scientific knowledge. To this must be annexed a brief *curriculum vitæ*, and at least three theses approved by the Dean. After this, follows the public discussion in the Aula of the University. The discussion has reference both to the dissertation and to the theses. Next, the opponents chosen by the candidate, who must be at least three in number, divide on the subject. Their names must appear on the title-page of the dissertation. Afterwards, anyone belonging to the University is at liberty (*e corona*) to oppose. Both the candidate and the opponents must be dressed in black. The discussion is either in German or in Latin. The Minister of Education has the privilege of allowing the use of another language, and also of dispensing with the discussion. 8. After the discussion is ended, the oath-taking and promotion of the candidate as a Doctor of Medicine, Surgery, and Midwifery takes place, conducted by the Dean or his representatives. After the ceremony of promotion is completed, the Dean delivers the diploma to the newly created doctor, who inscribes his name in the book of the Faculty. The expense of making out the diploma (15 *marks*) is borne by the candidate. A copy of it is fixed on the black board of the Faculty, and a certain number of copies are delivered to the Registrar of the University, for distribution. Promotion *in absentiâ* can on no account take place. 9. Four hundred and forty *reichsmarks* (£22) must be paid to the Dean as fees for the degree of Doctor in Medicine, of which 221 *marks* must be paid on application, and are forfeited after the *examen rigorosum*, if the candidate be unsuccessful. The second portion (204 *marks* for the Faculty and 15 *marks* for the University library) may be paid either at the same time with the other or within the period between the *examen rigorosum* and the promotion. In addition to this, the candidate has to pay expenses of printing the dissertation and diploma (*vide* 6 and 8). 10. The shortest time in which the whole of the proceedings for obtaining a doctor's degree can be gone through is ten days. In this case, however, it is stipulated that the dissertation be delivered ready for printing to the Dean at the first application, and that the other business of the Faculty permits them to proceed at once to the examinations.

The Medical Faculty of this University consists of the following professors, with between forty and fifty *docents* or private teachers. *Ordinary Professors:* K. B. Reichert, Anatomy; A. Bardeleben, Surgery and Clinical Surgery; R. Virchow, Pathology; F. T. Frerichs, Medicine and Clinical Medicine; E. Du Bois-Reymond, Physiology; A. Hirsch, Medicine and Epidemiology; E. Leyden, Medicine and Clinical Medicine; E. von Bergmann, Surgery and Clinical Surgery; C. Schröder and A. Gusserow, Obstetrics and Gynæcology; O. Liebreich, Materia Medica and Chemistry; C. Schweigger, Diseases of the Eye and Ophthalmic Clinic; C. Westphal, Psychology and Psychiatric Clinic. *Extraordinary Professors:* E. Henoch, Diseases of Children; F. Gurlt, Practical Surgery; C. Liman, Forensic Medicine; C. Skrzecka, Hygiene and Medical Police; J. Meyer, Medicine; R. Hartmann, Anatomy; G. Lewin, Diseases of the Skin and Syphilis; H. Jacobson, Medicine; E. Albrecht, Dental Surgery; H. Munk, Physiology; C. A. Ewald, Physical Diagnosis; A. Lucae, Aural Surgery; E. Salkowski, Chemistry; G. Fritsch, Physiology; O. Fränzel, Medicine; H. Senator, Diseases of Children; F. Busch, Surgery; H. Kronecker, Physiology; H. Fasbander, Gynæcology; H. L. Schöler, Ophthalmic Surgery; J. Hirschberg, Ophthalmic Surgery; L.

* For much of the information in this and subsequent pages, we are indebted to Dr. Hardwicke's *Medical Education and Practice in all Parts of the World.*

Küster, Surgery: A. Christiani, Physiology; M. Bernhardt, Medicine; E. Baumann, Physiology. The following professors also give instruction in subjects connected with medicine in the Philosophical Faculty. *Ordinary Professors:* S. Schwendener, Botany; H. Helmholtz, Physics; W. Peters, Zoology; A. W. Hofmann, Chemistry; A. W. Eichler, Botany; C. Rammelsberg, Chemistry. *Extraordinary Professors:* A. Garcke, Botany; L. Kny, Botany; P. Ascherson, Botany; E. von Martens, Zoology; E. Sell, Chemistry; A. Pinner, Chemistry and Pharmacy; C. Liebermann, Chemistry; L. Wittmack, Botany; C. Jessen, Botany.

The institutions for Clinical Teaching connected with the University are: the University Polyclinic (Dr. Meyer); the Ophthalmic Polyclinic (Dr. Schweigger); the Aural Polyclinic (Dr. Lucae); the Obstetric Clinic (Dr. Schröder); the Institute for Practical Instruction in State Medicine (Dr. Liman); in the Charité Hospital, the Medical Clinic (Dr. Frerichs), the Clinic for Elementary Medical Instruction (Dr. Leyden), the Surgical Clinic (Dr. Bardeleben), the Ophthalmic Clinic (Dr. Schweigger), the Obstetric Clinic (Dr. Gusserow), the Gynæcological Clinic (Dr. Schröder), the Clinics for Diseases of the Skin and Syphilis (Dr. Lewin), for Diseases of Children (Dr. Henoch), and for Diseases of the Mind and Nervous System (Dr. Westphal). The Pathological Institute is under the direction of Professor Virchow; the Physiological Laboratory under that of Professor Du Bois-Reymond; the Chemical Laboratory under that of Professor Hofmann; and the Pharmaceutical Laboratory under that of Professor O. Liebreich. The Pathological Institute, which owes its existence in its present form to Professor Virchow, and has served as the model for numerous similar institutions in Germany and elsewhere, is situated within the grounds of the Charité Hospital. It contains a lecture-theatre, a room for demonstrations, a museum, a chemical laboratory, a histological laboratory, a suite of rooms for the *post mortem* examinations, private rooms for the professor and his assistants, while in the basement-floor there are kept animals for experiment.

UNIVERSITY OF BONN.

A DEGREE in Medicine, Surgery, and Midwifery, is granted only under the following conditions, viz.:

1. An examination in all branches of medicine and surgery, of about three hours' duration, in the German language; 2. A written scientific dissertation in German or Latin; 3. Public defence of the dissertation in German or Latin; 4. Fee for the examination and diploma, 360 *marks* (£18), which must be paid prior to examination.

The following are the Professors in the Medical Faculty of this University. *Ordinary Professors:* C. Binz, Materia Medica; F. Trendelenburg, Surgery; C. Köster, Pathology; A. de la Valette St. George, Anatomy and Histology; F. von Leydig, Comparative Anatomy; E. Pflüger, Physiology; H. Rühle, Medicine; T. Sämisch, Diseases of the Eye; G. Veit, Gynæcology and Forensic Medicine. *Extraordinary Professors:* C. Finkelnburg, Mental Diseases; J. Doutrelepont, Surgery; C. von Mosengeil, Surgery; F. Obernier, Diseases of Children; H. Schaaffhausen, Physiology; M. Nussbaum, Anatomy and Histology; N. Zuntz, Anatomy and Histology. Instruction is also given in the Philosophical Faculty—*Ordinary Professors:* F. H. Troschel, Zoology; R. Clausius, Experimental Physics; E. Strassburger, Botany; and A. Kekulè, Chemistry. *Extraordinary Professor:* O. Wallach, Chemistry; F. Schmitz, Botany.

Connected with the University are medical, surgical, obstetric, and ophthalmic clinics; an anatomical theatre and museum, and physiological, pathological, pharmacological, and chemical institutes.

UNIVERSITY OF BRESLAU.

THE following Professors belong to the Medical Faculty of this University. *Ordinary Professors:* A. Biermer, Medicine; E. Ponfick, Pathology; H. Fischer, Surgery; R. Förster, Ophthalmic Surgery; H. Häser, Materia Medica and Therapeutics; C. Hasse, Anatomy; R. P. H. Heidenhain, Physiology; H. Fritsch, Obstetrics and Gynæcology. *Extraordinary Professors:* L. Auerbach, Comparative Anatomy; H. Cohn, Ophthalmology; H. Friedberg, Forensic Medicine and Public Health; R. Gscheidlen, Physiology and Physiological Chemistry; I. Klopsch, Surgery; A. Neisser, Diseases of the Skin and Syphilis; H. Neumann, Psychological Medicine; E. Richter, Surgery; R. Voltolini, Diseases of the Ear; L. Hirt, Forensic Medicine and Hygiene; H. Sommerbrodt, Medicine; O. Berger, Medicine; H. Gierke. Instruction is also given in the Philosophical Faculty on subjects connected with medicine by—*Ordinary Professors:* C. J. Löwig, Chemistry; H. R. Göppert, Pharmacology; A. Schneider, Zoology; O. E. Meyer, Experimental Physics; T. Poleck, Chemistry; F. Cohn, Botany. *Extraordinary Professsrs:* G. W. Körber, Botany; F. E. Dorn, Physics; V. von Richter, Chemistry.

The University possesses anatomical, physiological, pathological, pharmaceutical institutes, and clinics of medicine, surgery, obstetrics, ophthalmic surgery, syphilis and skin-diseases, and mental diseases.

UNIVERSITY OF ERLANGEN.

THE following are the regulations to be observed by candidates for the degree of Doctor of Medicine in this University.

1. Candidates for the degree of Doctor must announce their intention to the Dean of the Faculty of Medicine, and present the following documents: *a.* Evidence of having gone through the curriculum in a German gymnasium, or proof of equivalent general education; *b.* Proof of having studied medicine in one of the German Universities, or in a corresponding medical school abroad, during at least three years; *c.* A thesis, composed by the candidate, on some subject in medicine or natural science, with a written declaration, on word of honour, that the work is absolutely the candidate's own. 2. The dissertation is examined by a referee, appointed by the Dean; and, if it be judged to be of sufficient merit, the candidate is admitted to an oral examination, which is conducted in the German language. It may take place in two forms; *a.* As a colloquium, in the case of those who have passed an examination in medicine before a German examining board; *b.* As an extended examination on all departments of medical science, in the case of those who have not passed such an examination. The colloquium takes place under the presidency of the Dean before three delegates of the Faculty; the detailed examination is conducted by the Dean and four other members of the Faculty. Both the colloquium and the latter examination are held in public, and in German. 3. After the conclusion of

the oral examination, the examiners decide on the result. If the decision be favourable, the degree of Doctor is at once conferred, the fact being communicated to the candidate by the Dean, and his diploma issued to him. 4. The candidate, if his dissertation be approved, must have it printed at his own expense. At the back of the title-page it must be stated that the dissertation is printed with the consent of the Faculty; and the name of the reporter (*referent*) must be given. 5. The candidate must pay a fee of 300 *marks* (equal to about £15 10s.) for the granting of the Doctor's degree, and must also deliver 150 copies of his dissertation to the Faculty. 6. If the candidate fail to pass the examination, half of the fee is returned to him.

The Medical Faculty of this University consists of the following professors, with teachers. *Ordinary Professors:* J. von Gerlach, Anatomy; F. A. Zenker, Pathology; W. Heineke, Surgery; I. Rosenthal, Physiology; W. O. Leube, Practice of Medicine and Clinics; H. Sattler, Ophthalmology; P. Zweifel, Midwifery. *Extraordinary Professors:* F. W. Hagen, Psychological Medicine; W. Filehne, Materia Medica and Therapeutics; F. Penzoldt, Medicine. Instruction in subjects connected with medicine is also given in the Philosophical Faculty. *Ordinary Professors:* E. Lommel, Experimental Physics; Fischer, Chemistry; M. Reess, Botany; E. Selenka, Comparative Anatomy; A. Hilger, Pharmacy and Chemistry.

In connection with the University are the following institutions: the University Hospital, with medical, surgical, obstetric, psychiatric, and ophthalmic clinics; an anatomical, a physiological, and a pathological institute.

UNIVERSITY OF FREIBURG.

THE Faculty of Medicine here grants a degree in Medicine, Surgery, and Midwifery. The following are the conditions to be observed before being admitted to examination.

1. A certificate must be produced showing the respectability of the candidate, and also the amount of his education, both prior to and since his admission as a medical student. 2. A scientific dissertation must be handed to the Dean, written in German or Latin. 3. A fee of 300 *marks* (£15) must be paid to the Chief Beadle. In case of rejection, the candidate will receive half the fee back; and when he presents himself for examination again, he pays only that amount, viz., 150 *marks*. Should these conditions be complied with, and the thesis be deemed satisfactory, the candidate will be admitted to a *vivâ voce* examination in the German language.

The following are the subjects for examination: Anatomy, Materia Medica and Toxicology, Physiology, Medicine, Surgery, Pathological Anatomy, Midwifery, Ophthalmology.

If a candidate have already passed an examination as Physician before a German commission of examiners, the number of subjects may be reduced.

If the examination be passed, one of the following grades of honour is conferred: 1. *Summâ cum laude;* 2. *Insigni cum laude;* 3. *Cum laude.*

The Medical Faculty of the University is thus constituted. *Ordinary Professors:* A. Ecker, Human and Comparative Anatomy; H. Strasser, Anatomy; L. von Babo, Chemistry and Physiology; R. Maier, Pathological Anatomy and State Medicine; A. Hegar, Midwifery; F. Hildebrand, Botany; W. Manz, Ophthalmic Surgery; Ch. Bäumler, Materia Medica and Medicine; G. F. L. Thomas, Materia Medica and Medicine; H. Maas, Surgery. *Extraordinary Professors:* A. Schinzinger, Surgery; R. Kaltenbach, Midwifery; J. Latschenberger, Physiological Chemistry and Practical Physiology; R. Wiedersheim, Anatomy and Histology; A. Röhrig, Pharmacology; J. von Kries, Physiology; P. Langerhans; J. von Rotteck. In the Philosophical Faculty, lectures on subjects connected with medicine are given by Professors A. Weismann in Zoology, A Claus in Chemistry, and E. Warburg in Experimental Physics.

The University library contains 250,000 volumes. There are a chemical laboratory and institutions for the practical study of anatomy, pathology, physiology, etc.; and medical, surgical, obstetric, and ophthalmic clinics.

UNIVERSITY OF GIESSEN.

THE Faculty of Medicine grants a degree in Medicine, Surgery, and Obstetrics, which can only be obtained on the following conditions.

1. A *curriculum vitæ*, written by himself, must be sent to the Faculty by the candidate; also a certificate of gymnasial maturity, and a certificate of at least three years' medical and surgical study at a University or a Medical Institution. If the candidate be not a native of Germany, he must produce a certificate of sufficient preliminary studies from his own country in place of the gymnasial maturity certificate (a degree in arts or certificate of having passed the matriculation examination for medical students at any recognised University is sufficient). 2. The candidate must present a dissertation on some medical subject, written in German or Latin, together with a declaration in his own handwriting that he has composed the dissertation himself, without help from others, except what may be stated by him. In place of the dissertation, a previously published treatise or literary production may be substituted. 3. In case of admission by the Faculty, the whole of the documents are laid before the Rector and the Chancellor, who may object to the admission if they be not satisfied. 4. If no objection be made by the Rector and Chancellor, and the candidate have paid the promotion fees to the Quæstor of the University, the dissertation is to be judged by a Referee. If the Referee declare the work to be unsatisfactory, the candidate is rejected. In the contrary case, he is admitted to *vivâ voce* examination before the Faculty. 5. The *vivâ voce* examination takes place in the German language, and lasts two or three hours. It is held in public, except when the candidate is already advanced in age, or in a few other cases, when the Faculty decree that it may be held in private. 6. The verbal examination embraces the following subjects: Anatomy, Physiology, Pathological Anatomy, Histology, Pathology and Medicine, Materia Medica and Therapeutics (including Toxicology), Surgical Pathology and Surgery, Forensic Medicine, Obstetrics. 7. Immediately after the conclusion of the examination, the result is decided on by the President and examiners in a private sitting, and at once made known to the candidate by the President. The examination is not passed when two or more members of the Faculty declare the result of the examination to have been unsatisfactory. The kind of degree to be granted is decided by a majority of votes—whether *cum laude, magnâ cum laude*, or *summâ cum laude*. 8. The approved dissertation must be printed and published, and the

appointed number be presented to the Faculty before the promotion takes place. Exception is made when the candidate has already handed in a printed treatise. 9. Promotions to the M.D. *in absentiâ* do not take place at this University, except in the case of degrees granted *honoris causâ* by the unanimous decision of the Faculty, to men who have rendered some great service to the science of medicine. 10. The fee for promotion is 440 *marks* (£22), which must be paid to the Quæstor of the University at the time of the petition for admission. If the dissertation be not considered satisfactory, and the candidate in consequence be not admitted to the verbal examination, 100 *marks* are retained by the Faculty. If the verbal examination be not passed, half the fees are forfeited; but, if the candidate present himself again, he has only to pay half the fees.

The following are the professors in the Faculty of Medicine in this University. *Ordinary Professors:* H. Bose, Surgery; J. Wilbrand, Forensic Medicine and Hygiene; C. Eckhard, Physiology and Toxicology; F. Riegel, Medicine; F. Ahlfeld, Obstetrics and Gynæcology; G. Pflug, Veterinary Medicine; F. Marchand, Pathology; F. W. von Hippel, Ophthalmic Surgery; C. Gähtgens, Materia Medica. *Extraordinary Professors:* F. Birnbaum, Diseases of Children; F. Eichbaum, Histology and Veterinary Medicine. There are also two *docents*. In the Philosophical Faculty, subjects connected with medicine are taught by—*Ordinary Professors:* H. Will, Chemistry; H. Hoffmann, Botany; W. C. Röntgen, Experimental Physics; A. Schneider, Zoology. *Extraordinary Professors:* A. Naumann and A. Laubenheimer, Chemistry.

The University Library contains 140,000 volumes. There are an academical hospital, with medical, surgical, and ophthalmic clinics, a lying-in institution, a chemical laboratory, a physiological, a pathological, and a pharmacological institute.

UNIVERSITY OF GÖTTINGEN.

A DEGREE in Medicine, Surgery, and Obstetrics is granted under the following conditions.

1. A written essay must be sent in on any medical subject chosen by the candidate, on the result of which depends the entrance to the examination. 2. If the essay be considered satisfactory, the student is admitted to a *viva voce* examination, which lasts a few hours, and is always held in German or Latin, at the option of the candidate. 3. A fee of 439 *marks* (£21 19s.) must be paid to the Medical Faculty prior to examination. 4. The subjects of examination are Anatomy and Morbid Anatomy, Physiology, Pharmacology, General Pathology and Medicine, Surgical Pathology and Surgery, Toxicology, Medical Jurisprudence, and Obstetrics.

If the candidate be successful, he receives a diploma, and promises to hold his academical honour with dignity.

The Medical Faculty of this University consists of the following professors, with private teachers. *Ordinary Professors:* J. Henle, Anatomy; F. Wöhler, Chemistry; G. Meissner, Physiology; H. Schwartz, Midwifery and Diseases of Women; L. Meyer, Psychological Medicine; Th. Leber, Ophthalmic Surgery; W. Ebstein, Medicine; W. Marmé, Materia Medica; F. König, Surgery; J. Orth, Pathology; W. Baum; *Extraordinary Professors:* H. Eichhorst, Medicine and Diseases of Children; C. F. Lohmeyer, Surgery; J. Rosenbach, Surgery; W. Krause, Physiology; E. F. W. Herbst, Physiology; T. Husemann, Materia Medica and Toxicology. In the Philosophical Faculty instruction is given by—*Ordinary Professors:* J. B. Listing, Physics; J. Reinke, Botany; F. Ehlers, Zoology; the Count of Solms-Laubach, Botany; H. Hübner, Chemistry. *Extraordinary Professors:* C. Boedecker, Pharmacy and Physiological Chemistry; L. von Uslar, Organic and Pharmaceutical Chemistry; E. Riecke, Experimental Physics; H. J. Esser, Veterinary Medicine; J. Post, Chemistry.

The following institutions are connected with the Medical Faculty: institutions for teaching animal and vegetable physiology and pharmacology, and pathology; the Ernst-August Hospital, with medical, surgical, and ophthalmic clinics; a lying-in hospital; a psychiatric clinic in the Lunatic Asylum; a chemical laboratory; and a veterinary institute.

UNIVERSITY OF GREIFSWALD.

THE Medical Faculty of this University consists of the following professors, with teachers. *Ordinary Professors:* J. Budge, Anatomy; H. C. A. Pernice, Midwifery and Diseases of Women; F. Grohé, Pathological Anatomy; F. Mosler, Medicine; P. Vogt, Surgery; L. Landois, Physiology; R. Schirmer, Ophthalmic Surgery; (vacant), Materia Medica. *Extraordinary Professors:* C. Eichstedt, Midwifery, Diseases of the Skin, and Syphilis; W. Häckermann, Forensic Medicine and Hygiene; R. Arndt, Psychology and Nervous Diseases; P. Krabler, Diseases of Children; F. Sommer, Anatomy. Instruction is given in the Philosophical Faculty by—*Ordinary Professors:* A. H. A. J. Münter, Botany; H. Limpricht, Chemistry; H. Schwanert, Chemistry and Pharmacy; A. Gerstäcker, Comparative Anatomy and Zoology. *Extraordinary Professor:* F. Baumstark, Chemistry.

The University Hospital contains medical, surgical, ophthalmic, and obstetric clinics.

UNIVERSITY OF HALLE.

THE following are the regulations for the medical degree.

1. Application for admission to the examinations must be made to the Dean, and at the same time must be presented:—(*a*) a *curriculum vitæ*; (*b*) certificate of maturity from a gymnasium; (*c*) certificate of having passed a *tentamen physicum* at least two years previously; (*d*) certificates of leaving, from the Universities, over at least eight medical scholastic half years. Whoever is unable to present these certificates complete, and in the manner specified, must obtain a dispensation from the Chief Manager. 2. On making application, 360 *marks* must be paid to the Dean for the examinations and the promotion, besides which, 12 *marks* must be paid before the promotion to the Secretary of the University. 3. The examinations are held on two consecutive days, by the regular professors of the Faculty, on each of which days the result of the examination is made known to the candidate. 4. After passing his examination, the candidate must compose a scientific treatise on any subject he pleases in medical science, and deliver it to the Dean, together with the theses, to be publicly discussed, and the *curriculum vitæ* for examination and approval; the same when printed must fill at least two quires. The candidate must bear the cost of printing both the treatise and the diploma; but the diploma must be laid before the Dean for ap-

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proval before being printed. Of the treatise, 172 copies must be delivered to the Secretary of the University at least three days before the promotion, and 40 copies of the diploma; when the Secretary will give a receipt in the name of the Dean, and also for the 12 *marks* mentioned under No. 2. 5. The candidates have to request all the examiners personally to be present at the examination, likewise the members of the Faculty, when handing over the printed treatise for promotion. 6. In the application for promotion, the candidate solicits from the Dean, in a few preliminary words, permission to defend his treatise and the theses; and this takes place, then, against two previously appointed opponents; after which, those present are also called upon to join in the discussion. After the discussion is ended, the candidate begs the Dean to grant him the degree of Doctor; and this is done by administering the doctoral oath, and delivering the diploma. 7. Whoever fails to pass the examination, which includes all branches of medicine and surgery, will receive back from the fees paid 40¼ *marks;* the rest goes to the Faculty. 8. The time for taking the degree is left to the candidate. He must not, however, exceed one year from the time of passing the examination to the taking of the degree, or else he will have to submit to re-examination, and must pay over again all the fees.

The following professors, with several private teachers, constitute the Medical Faculty of this University. *Ordinary Professors:* L. Krahmer, Materia Medica and Forensic Medicine; Th. Weber, Medicine; R. Olshausen, Obstetrics and Gynæcology; Th. Ackerman, Pathology; H. Welcker, Anatomy; R. Volkmann, Surgery; J. Bernstein, Physiology; A. Gräfe, Ophthalmic Surgery; E. Hitzig, Psychological Medicine; K. J. Eberth, Histology. *Extraordinary Professors:* H. Schwartze, Diseases of the Ear; E. Kohlschütter, Medicine; E. Harnack, Animal Chemistry and Biology; B. Solger, Anatomy; A. Seligmüller, Medicine. In the Philosophical Faculty, instruction in Sciences connected with Medicine is given by—*Ordinary Professors:* G. Kraus, Botany; J. Vollard, Chemistry; H. Grenacher, Zoology. *Extraordinary Professors:* B. Rathke, Chemistry; E. Schmidt, Pharmaceutical Chemistry; A. Oberbeck, Physics.

The University library contains 100,000 volumes. Connected with the University are a chemical laboratory, a botanical garden, a zoological museum, an anatomical theatre and zootomical museum, a lying-in institution, a medico-chirurgical hospital, and physiological, pathological, and pharmaceutical laboratories.

UNIVERSITY OF HEIDELBERG.

THE following are the regulations to be observed for graduation in medicine in this University.

1. In applying for examination for the degree of Doctor, no evidence of previous study is required. 2. The same demands are made of all candidates; the only difference is that the oral examination is shortened if evidence be produced that the candidate has undergone, in the German empire, the *Staats-examen* for license to practice. 3. The subjects of examination are (1) Anatomy; (2) Physiology; (3) Pathological Anatomy; (4) Materia Medica (Pharmacognostics, Pharmacodynamics, and Toxicology); (5) Medicine; (6) Surgery; (7) Midwifery; (8) Ophthalmic Surgery. 4. A Candidate may select one of these as the principal subject of his examination. All the other subjects then become secondary. 5. The examination is oral and written. The oral examination can only be conducted in the German language. 6. The written part of the examination consists of a medical dissertation in German or Latin, which must be given in before the oral examination. The dean of the Faculty of Medicine delivers the dissertation (or a scientific publication by the candidate, which may be substituted for it) to a reporter for his opinion. The reporter is authorised to hold a conversation with the candidate on the subject treated of in the work. In voting on the dissertation, the question is put whether it shall be allowed to be printed. If it be printed, the names of the dean for the time being, and of the reporter, must appear on the title-page. 7. The oral examination comprises the principal subject chosen by the candidate, and a certain number of the secondary subjects. The number and selection of the secondary subjects vary, according as the state-examination has or has not been passed. If proof be given that a state-examination has been passed in the German Empire, the candidate is examined in the principal subject, and in three of the secondary subjects, selected by himself. If there be no proof of a state-examination, he is examined in five secondary subjects. Of these, three are fixed—Anatomy, Physiology, and Pathological Anatomy; the other two may be chosen by the candidate. But if one of the three fixed subjects be chosen by the candidate as the principal subject, its place as a secondary subject is taken by another, selected by the candidate. 8. The duration of the oral examination depends on the number of subjects. The candidate is examined on the principal subject for thirty minutes, on each secondary one for fifteen or twenty minutes, according to the judgment of the examiners. 9. On the result of the entire examination, three notes are granted. The first (*summâ cum laudè*) can only be granted when the dissertation has received the *imprimatur* of the Faculty. Even when the *imprimatur* has been received, the result of the oral examination may be such as to entitle the candidate to the second vote (*insigni cum laude*) or to the third (*cum laude*). 10. No oath is administered. When the diploma is delivered to the candidate by the dean, he has to give his hand in promise that he will bear his academicial dignity with honour. 11. The cost of the examination, exclusive of that of the diploma, amounts in all to 444 *marks* (about 22*l.* 5*s.*), which must be paid before the commencement of the examination. Of this sum, if the oral examination be not passed, 179 *marks* (about 9*l.*) are returned. 12. The diploma contains a record of the principal subject, the vote on the whole examination, and the judgment on the dissertation.

The Medical Faculty consist of the following professors, with several teachers. *Ordinary Professors:* F. Kehrer, Midwifery; W. Delffs, Chemistry; C. Gegenbaur, Human and Comparative Anatomy; W. Kuhne, Physiology and Histology; O. Becker, Ophthalmic Surgery; Th. von Dusch, Medicine; W. Erb, Medicine; J. Arnold, Pathology; V. Czerny, Surgery; C. Fürstner, Psychological Medicine. *Honorary Professor:* A. Nuhn, Human and Comparative Anatomy. *Extraordinary Professors:* H. Oppenheimer, Materia Medica; S. Moos, Diseases of the Ears; F. Knauff, Forensic Medicine and Hygiene; H. Lossen, Surgery; A. Weil, Medicine and Diseases of the Skin, and Syphilis; R. Thoma, Pathological Anatomy; H. Braun, Surgery; F. Schultze, Diseases of the Nervous System; A. Jurasz, Diseases of the

Throat. In the Philosophical Faculty, instruction in subjects connected with medicine is given by—*Ordinary Professors*: R. Bunsen, Chemistry; H. Kopp, Chemistry; G. Quincke, Experimental Physics; O. Bütschli, Zoology; E. Pfitzer, Botany. *Extraordinary Professors*: A. Bornträger, Pharmacy; A. Horstmann, Chemistry; R. Kossmann, Zoology.

In connection with the University are a hospital, with medical, surgical, and ophthalmic clinics, an institution for diseases of the ear, a lying-in institution, anatomical, pathological, physiological, and zoological institutes, two chemical laboratories, and a botanical garden.

UNIVERSITY OF JENA.

THE Faculty of Medicine of this University grants a degree in Medicine, Surgery, and Obstetrics, the conditions for which are as follow:

1. Certificate to be given as to the extent of medical studies, and the period of time which has elasped since their completion (at least six terms). 2. Satisfactory evidence as to character, from the neighbouring head office of police. 3. A written essay upon any subject of medical science, in German or Latin. The same composition may be given up, to be printed afterwards in the form of a dissertation. 4. Matriculation into this University. This is done when, upon fulfilment of the other conditions, the candidate himself makes his appearance. 5. Payment of examination and promotion fees must be made to the amount of 141 *thalers* (about £22). In case the examination is not passed, the promotion fees and 52 *thalers* are returned. The examination will be held in the German language only. It comprises all branches of medicine, viz.: Anatomy, Physiology, Histology, General Pathology, Pathological Anatomy, Special Pathology, Medicine, Therapeutics, Surgery, Obstetrics, etc. When the examination is passed, the student has to give in his dissertation, the subject of which he chooses for himself. The Faculty examines the work to see whether it is worth publication. A dispensation from the Latin or German disputation may be granted, when the examination is very satisfactorily passed. After the essay is printed, and also when the public disputation is over, the making out of the medical diploma takes place. The degree of doctor will only be granted in this University by the Faculty upon fulfilment of the above-named conditions.

The Medical Faculty of this University is constituted as follows. *Ordinary Professors*: F. Ried, Surgery; B. Schultze, Obstetrics; W. Müller, Pathology; W. Preyer, Physiology; O. Hertwig, Anatomy; (vacant), Medicine. *Honorary Professor:* M. Seidel, Materia Medica. *Extraordinary Professors:* L. Schillbach, Diseases of the Eye and Ear; C. Frommann, Physiology and Histology; C. Bardeleben, Anatomy; P. Fürbringer, Diseases of the Skin and Syphilis; O. Küstner, Gynæcology; H. Kuhnt, Ophthalmic Surgery. Subjects connected with Medicine are also taught in the Philosophical Faculty by—*Ordinary Professors*: G. A. Geuther, Chemistry; E. Häckel, Zoology. *Extraordinary Professors:* E. Reichardt, Chemistry; E. Hallier, Botany; R. Hertwig, Zoology; H. Gutzeit, Chemistry and Pharmacy.

Connected with the University are the Grand-Ducal hospital, lying-in institution, and lunatic asylum; anatomical, zoological, physiological, pathological, and chemical laboratories and museums, etc.

UNIVERSITY OF KIEL.

THE following are the conditions for obtaining the medical degree: 1. The presentation, on application, of *(a)* a *curriculum vitæ; (b)* certificate of medical studies; *(c)* a scientific treatise; 2. A written examination; 3. A verbal examination before the Faculty; 4. Payment of 360 *marks*.

In this University the Medical Faculty consists of the following professors, with five private teachers. *Ordinary Professors:* C. C. T. Litzmann, Obstetrics and Gynæcology; F. Esmarch, Surgery; H. Quincke, Medicine; V. Hensen, Physiology; A. Heller, Pathology; C. Völckers, Diseases of the Eye; W. Flemming, Anatomy. *Extraordinary Professors:* J. Bockendahl, Forensic Medicine; G. J. F. Edlefsen, Medicine; F. Petersen, Surgery; A. Pansch, Anatomy; F. A. Falck, Materia Medica. Instruction is also given in the Philosophical Faculty by *Ordinary Professors*: C. Himly, Chemistry; K. Möbius, Zoology; A. Engler, Botany; A. Ladenburg, Chemistry.

There are a medico-chirurgical hospital, containing medical, surgical, and ophthalmic clinics, a lying-in institution, and laboratories and museums in connection with the several subjects taught.

UNIVERSITY OF KÖNIGSBERG.

THE Medical Faculty of this University consists of the following professors, with several private teachers. *Ordinary Professors:* W. von Wittich, Physiology; (vacant), Obstetrics and Gynæcology; G. Schwalbe, Anatomy; E. Neumann, Pathology; C. Schönborn, Surgery; B. Naunyn, Medicine; J. Jacobson, Ophthalmic Surgery; M. Jaffe, Medical Chemistry. *Extraordinary Professors:* H. Bohn, Diseases of the Skin; A. W. Grünhagen, Histology; S. Samuel, Therapeutics; S. Pincus, Forensic Medicine; E. Berthold, Diseases of the Eye and Ear; F. R. A. Schneider, Surgery and Military Surgery; B. A. Benecke, Anatomy; E. Burow, Surgery; J. Caspary, Diseases of the Skin and Syphilis; P. Baumgarten, Pathology. Lectures are also given in the Philosophical Faculty by—*Ordinary Professors:* R. Caspary, Botany; H. Spirgatis, H. Ritthausen, and W. Lossen, Chemistry.

Connected with the University are anatomical, pathological, and physiological institutions, medical, surgical, obstetrical, and ophthalmic clinics; chemical and pharmaceutical laboratories, etc.

UNIVERSITY OF LEIPZIG.

THE Medical Faculty of this University consists of the following professors and a number of private teachers. *Ordinary Professors:* J. Radius, Hygiene and Pharmacology; F. Hofmann, Hygiene; E. Wagner, Medicine; C. S. F. Credé, Midwifery; J. Cohnheim, Pathological Anatomy; C. F. W. Ludwig, Physiology; C. Thiersch, Surgery; E. A. Coccius, Ophthalmic Surgery; W. His, Anatomy; C. W. Braune, Topographical Anatomy; (vacant), Medicine. *Extraordinary Professors:* H. Sonnenkalb, Forensic Medicine and Hygiene; J. V. Carus, Zoology and Comparative Anatomy; A. Winter, Materia Medica; C. Hennig, Obstetrics; C. H. Reclam, Forensic Medicine and Hygiene; B. G. Schmidt, Surgery; E. F. Wenzel, Anatomy and Histology; J. O. L. Heubner, Medicine; E. R. Hagen, Otology, etc.; A. R. Brenner, Diseases of the Nervous System; P. E. Flechsig, Anatomy and Histology; E. Drechsel, Physiology; C. Weigert,

Medicine ; A. Rauber, Anatomy. Instruction is also given in the Philosophical Faculty by—*Ordinary Professors:* W. Hankel, Physics ; H. Kolbe, Chemistry ; A. Schenck, Botany ; R. Leuckart, Zoology ; G. Wiedemann, Chemistry. *Extraordinary Professors:* H. Hirzel, Pharmacy ; F. A. Zürn, Veterinary Medicine ; A. Weddige, Chemistry.

In connection with the University are chemical, physico-chemical, and pathologico-chemical laboratories ; a zoological institute, under the direction of Professor Leuckhardt ; an anatomical institute, under Professor His ; a physiological institute, under Professor Ludwig ; and various clinics, etc.

UNIVERSITY OF MARBURG.

ANY one wishing to proceed to the medical degree at this University must send in to the Dean of the Faculty of Medicine the following :

1. A *curriculum vitæ ;* 2. A certificate of scientific studies ; 3. A certificate of at least four years' study at a recognised University or Medical College : 4. A dissertation in the German language. If these be considered satisfactory by the Faculty, the candidate is then admitted to a *vivâ voce* examination in the German language. If the examination be satisfactorily passed, the dissertation must be printed, at the candidate's expense, and publicly defended. Three or four printed theses must also be sent in. The cost for the diploma is 330 *marks* (16*l.* 10*s.*)

The following are the professors in the Medical Faculty of this University. *Ordinary Professors:* C. F. von Heusinger, History of Medicine ; H. Nasse, Physiology ; W. Roser, Surgery ; R. Böhm, Medicine ; R. Dohrn, Midwifery ; N. Lieberkühn, Anatomy ; F. W. Beneke, Pathological Anatomy and General Pathology ; E. Mannkopff, Pathology and Therapeutics ; H. Schmidt-Rimpler, Ophthalmology ; H. Kramer, Psychology ; E. E. Külz, Physiology. *Extraordinary Professors:* G. Wagener, Anatomy ; H. Horstmann, Forensic Medicine ; H. Lahs, Midwifery. Lectures are also given in the Physiological Faculty by—*Ordinary Professors:* C. Zwenger, Pharmaceutical Chemistry ; A. Wiegand, Botany ; R. Greeff, Zoology ; T. Zincke, Chemistry.

A hospital and various laboratories, etc., for practical instruction are connected with the University.

UNIVERSITY OF MUNICH.

IN granting medical degrees at this University, a distinction is made between those candidates who have already passed a satisfactory public examination as Physicians, before a German Commission of Examiners, and those who have not, be they natives or foreigners. From those candidates who have already passed the satisfactory German examination, nothing further is required in order to admit them to compete for the doctorate than the certificate of having passed such examination. The Faculty requires, however, the presentation of a dissertation, written in either the Latin or German language. This is delivered by the Dean to one of the members of the Faculty for examination and judgment, and with his judgment it is circulated amongst the Faculty. If the Faculty approve of it, then it is printed, at the expense of the candidate, for the members of the Faculty.

Candidates, however, who have not passed the German 'Approbation-examination' for Physicians must, before being admitted to the doctorate examination, present to the Medical Faculty the following : 1. A Gymnasial certificate, or at least such certificate as shows that the candidate has enjoyed a regular education ; 2. Certificates of at least four years' attendance at a university or medical institution, and of attendance at the lectures on the principal branches of natural science and medicine ; 3. Clinical certificates of the treatment of an internal surgical and eye complaint, and also assistance at a birth ; 4. A certificate of the performance of an operation on the dead body, and the application of a bandage ; 5. The candidate must then pass a two hours' verbal examination in the German language) in the following branches, viz. : Anatomy, Physiology, General Pathology and Pathological Anatomy, Materia Medica, Therapeutics, Surgery, Midwifery, Hygiene, Diseases of the Eye ; 6. The candidate has also to give in a dissertation, which must be examined by a member of the Faculty to see whether it is worthy of being printed. The printing may be dispensed with at the request of the candidate ; 7. The fees for examination and promotion amount, for both kinds of candidates, to 100 *thalers*, 300 *marks*, or 175 *florins* (15*l.*).

The professorial staff of the Medical Faculty of this University is constituted as follows. *Ordinary Professors:* F. X. von Gietl, Medicine ; F. C. von Rothmund, Surgery and Clinical Surgery ; C. T. von Siebold, Zoology and Comparative Anatomy ; F. Seitz, Materia Medica ; L. A. Buchner, Pharmacy ; M. von Pettenkofer, Hygiene ; W. F. C. von Hecker, Midwifery ; J. N. von Nussbaum, Surgery and Clinical Surgery ; A. von Rothmund, Ophthalmic Surgery ; C. von Voit, Physiology ; H. von Ziemssen, Special Pathology and Therapeutics ; B. von Gudden, Psychology ; C. Kupffer, Anatomy ; N. Rüdinger, Anatomy ; O. Bollinger, Pathology and Hygiene. *Extraordinary Professors:* H. Ranke, Medicine ; J. Amann, Midwifery ; A. Martin, State Medicine ; J. Oertel, Laryngoscopy ; H. von Bock, Toxicology ; J. Bauer, Medicine. Instruction is also given in the Philosophical Faculty by—*Ordinary Professors:* G. von Jolly, Experimental Physics ; C. T. von Siebold, Comparative Anatomy ; C. W. von Nägeli, Botany ; L. Radlkofer, Botany ; A. Bäyer, Chemistry. *Extraordinary Professors:* J. Ranke, Physiology ; E. Fischer, Chemistry.

The University, which is situated in the Ludwigstrasse, and contains a library consisting of 500,000 volumes. The chemical laboratory for hygiene is under the direction of Professor von Pettenkofer.

UNIVERSITY OF ROSTOCK.

WHOEVER wishes to graduate as 'Medicinæ, Chirurgiæ, et Artis Obstetriciæ Doctor' at this University, must apply to the Dean of the Medical Faculty, and deliver to him the following documents. 1. A certificate of having gone through the requisite course of studies in a university. 2. A certificate of examination, testifying to the ability of the candidate in the practice of medicine. 3. A treatise on any subject appertaining to medical science, composed by the candidate himself. A fee of 350 *marks* must be paid to the Faculty at the same time, of which two-thirds will be returned provided the treatise is not deemed satisfactory. The proof of having passed a satisfactory examination in Germany is, under the circumstances, satisfactory. If, however, this document should not appear satisfactory, or cannot be presented at all, the Faculty require that the candidate be subjected to an examination by the Faculty which shall pretty nearly cor-

respond to the German States' Examination. For this examination, an additional sum of 200 *marks* must be paid to the Faculty. Only for special cases does the Faculty reserve to itself a special form of examination.

The inaugural dissertation must be the candidate's own, and he must append to his treatise a written declaration to that effect. It is not, however, required that the work be composed entirely without assistance; but in this case the literary resources, and also the name of him or them from whom he has received help, must be clearly and distinctly stated. Those essays are considered the best which contribute most to medical or scientific knowledge. After the dissertation has been stamped by the Dean in the name of the Faculty, the same must be printed, at the expense of the author, and at least 125 copies delivered to the Faculty. When the candidate has satisfactorily fulfiled the above conditions, he must introduce his essay, and read it publicly in the Aula, and defend it against any objections that may be made.

Promotions *in absentiâ* cannot be made, except only in the case of a *promotio honoris causâ* for distinguished service to medical science.

The Medical Faculty of this University consists of the following *Ordinary Professors:* H. Stannius; T. Thierfelder, Special Pathology and Therapeutics; H. R. Aubert, Physiology; W. von Zehender, Ophthalmology; F. Schatz, Midwifery; F. S. Merkel, Anatomy; O. Nasse, Chemistry; O. W. Madelung, Surgery; A. Thierfelder, Pathological Anatomy. *Extraordinary Professor:* J. Uffelmann, Medicine. In the Philosophical Faculty, lectures on subjects connected with medicine are delivered by—*Ordinary Professors:* J. Roeper, Botany; O. Jacobsen, Chemistry; A. Götte, Comparative Anatomy and Zoology; and L. Matthiessen, Experimental Physics.

UNIVERSITY OF STRASBURG.

THE following is an extract from the regulations of the University of Strasburg relative to Degrees in Medicine.

Any person desirous of obtaining the degree of Doctor of Medicine can only be admitted to graduation on fulfilling the following conditions. *a.* If he belong to the German empire, he must have completed an academical four years' course of study of Medicine, or of the Natural Sciences. By an unanimous decision of the Faculty, one or two Sessions may be omitted. Foreigners desirous of graduating are not required to have passed through the four years' course if they produce proof of having received instructions equivalent to the course of study in the Medical Faculty of Germany. *b.* He must present a scientific essay (dissertation) composed by himself. *c.* He must undergo the Faculty examination. *d.* He must pay the prescribed fee of 240 *marks*. In his application for graduation, which must be addressed to the Dean, the candidate must produce the evidence referred to in *a*, and forward a scientific memoir in some department of medicine, with a written assurance that it is absolutely his own composition. If the dissertation receive the approval of the Faculty, the candidate is admitted to examination.

The examination is conducted by the ordinary professors, and consists, as a rule, of an oral theoretical examination in all important departments of medicine. If the candidate fail to give satisfaction in the oral examinations, he must, in order to obtain the degree of doctor, again undergo the examination after a time to be determined by the Faculty, but he is not required to present a second dissertation. In the case of candidates who have already passed the State examination, a colloquy before three members of the Faculty may, by the unanimous decision of the Faculty, be substituted for the oral examination.

Degrees in Medicine are not conferred on absent candidates.

If the dissertation be rejected, the candidate receives the whole fee back. If the dissertation be approved, but the candidate fail in the examination, 90 marks are returned to him, but, when he is again admitted to examination, only half that fee is required. After the Faculty examination has taken place and the dissertation has been printed and published, the candidate is formally admitted to the degree of Doctor by the issuing of a printed diploma, the names of the successful candidates being announced. The candidate has to bear the expense of printing the dissertation and of the diploma. There is no public ceremony, and no oath is administered.

Matriculation takes place on the first four Wednesdays of the season, from twelve to one o'clock. After the end of these four weeks, the rector can allow matriculation only on special grounds. Any one desirous of matriculating as a student, and attending the lectures and other instructions given in the University, must, on his arrival in Strasburg, communicate with the Secretary of the University, in order to be inscribed. Other persons desirous of attending the lectures must obtain permission from the respective teachers, and must then at once communicate with the Secretary of the University.

The following are the professors and teachers of the University. *Ordinary Professors:* W. Waldeyer, Human Anatomy and Embryology; J. G. Jössel, Anatomy; F. L. Goltz, Physiology; F. Hoppe-Seyler, Physiological and Pathological Chemistry; O. Schmiedeberg, Pharmacology and Therapeutics; F. von Recklinghausen, Pathological Anatomy and Physiology, and Histology; A. Kussmaul, Medicine and Clinical Medicine; A. Lücke, Surgery and Clinical Surgery; W. A. Freund, Obstetrics and Gynæcology; F. Wieger, History of Medicine, Diseases of the Skin, and Syphilis; A. Aubenas, Obstetrics and Gynæcology; F. Jolly, Psychiatry; L. Laqueur, Diseases of the Eye. *Extraordinary Professors:* O. Kohts, Medicine and Diseases of Children; A. Kuhn, Diseases of the Ear. There are also several *docents*. Instruction in subjects connected with Medical Science is also given in the Faculty of Mathematics and Natural Science by the following—*Ordinary Professors:* O. Schmidt, Comparative Anatomy; A. de Bary, Botany; A. Kundt, Experimental Physics; R. Fittig, Experimental Chemistry. *Extraordinary Professors:* F. Rose, Practical Chemistry; C. F. Braun, Physics.

Connected with the University are institutions for the practical study of anatomy, experimental physiology, physiological chemistry, pathology, and pharmacology, and clinics for medicine, surgery, midwifery, mental diseases, diseases of the eye, and syphilis, and diseases of the skin.

UNIVERSITY OF TÜBINGEN.

THE Faculty of Medicine here grants a degree in Medicine under the following conditions.

1. The candidate must send in with his application—*a.* A *curriculum vitæ; b.* A certificate of

having gone through a thorough course of instruction at the Gymnasium or some equivalent institution; *c.* Proof of a sufficient study of medicine at a university, and certificates of having attended the lectures having reference to the subjects of examination. 2. The examination consists of a written and a subsequent verbal one. A legalised proof of having passed a satisfactory examination in medicine and surgery in a foreign country dispenses with the written examination, but not with the verbal one. In no case can a degree be granted *in absentiâ*. 3. In the written examination will be put one question in each of the following subjects: 1. Anatomy; 2. Physiology; 3. Materia Medica; 4. General Pathology and Therapeutics; 5. Two questions in Special Pathology and Therapeutics. In addition to which, if a Doctor's degree in Surgery be required, one question will be put on each of the following subjects: 1. General Surgery; 2. Special Surgery; 3. Surgical Operations; 4. Midwifery. 4. The fees amount to 300 *marks*, including the printing of the diploma, which fee must be paid on application. If the candidate be rejected at the written examination, and be not admitted to the verbal one, the whole of the fees will be returned. If he be rejected after the verbal one, only half will be returned. 5. The candidate must compose a dissertation under the presidency of a member of the Faculty, and get it printed; 250 copies are to be presented to the University. If, however, the essay be published either in a periodical or as a special pamphlet, 100 copies will suffice, but they must be provided with a special title-page. Only such candidates as have given numerous and satisfactory literary proofs of their capacity can be allowed to dispense with the composition.

The Medical Faculty of this University consists of the following professors, with private teachers. *Ordinary Professors:* P. Bruns, Surgery; K. von Vieroret, Physiology; J. von Säxinger, Midwifery; C. von Liebermeister, Medicine and Materia Medica; T. H. Jürgensen, Medicine and Diseases of Children; A. Nagel, Ophthalmology; P. J. W. Henke, Anatomy; E. Ziegler, Pathology. *Extraordinary Professors:* O. Oesterlen, Forensic Medicine and Hygiene. Lectures are also given on subjects connected with Medicine in the Faculty of Natural Science by—*Ordinary Professors:* F. von Reusch, Experimental Physics; T. Eimer, Zoology; C. G. Hüfner, Chemistry; L. Meyer, Chemistry; W. Pfeffer, Botany; and *Extraordinary Professor:*—Hegelmaier, Botany.

A hospital and institutions for practical instruction are connected with this University.

UNIVERSITY OF WÜRZBURG.

BEFORE being admitted to the examination for the Doctorate of Medicine, Surgery, and Midwifery, the candidate must pass the medical approbation examination, which consists in showing—by testimonials or certificates—that he has a good moral character, and that he has passed through four years' study at an University, six sessions of which must have been devoted to medical studies. Upon fulfilment of these conditions, the candidate will be admitted to a written and *vivâ voce* examination, before which, however, he must pay to the Faculty 300 *marks* (£15). The written examination consists in the composition of an essay on some subject in theoretical or practical medicine, which dissertation must be handed to the Dean, who will give it to one of the examining professors to report on. It is customary for the dissertation to be printed. If the decision of the reporter with regard to the theme be unfavourable, admission to the *vivâ voce* examination is denied, and another theme must be composed and handed in at a future time. Should the second theme, however, be deemed unsatisfactory, the candidate will not be allowed to reappear. He then receives back all his fees except 30 *marks*. If the dissertation be approved by the Faculty, the candidate is admitted to a *vivâ voce* examination, in the German language, which consists of the following subjects: Anatomy and Pathological Anatomy, Physiology, Pathology and Medicine, Special Therapeutics, Surgery, Obstetrics and Ophthalmology. A knowledge also of Psychology and State Medicine is required. After taking the examination oath, the result and standing of the examination is imparted to the candidate by the Dean—whether very good, good, or moderate.

When the candidate is unsuccessful at the *vivâ voce* examination, he receives back half the fees, and is allowed to present himself for examination again in six months' time by paying half the fees again. Only one more attempt is, however, allowed after the first rejection at the *vivâ voce* examination.

After successful examination, the candidate receives his diploma of doctor.

In this University, the Medical Faculty consists of the following professors, with several *docents*. *Ordinary Professors:* F. von Rinecker, Syphilis and Diseases of the Skin, also Psychiatry; A. von Kölliker, Anatomy; F. W. Scanzoni von Lichtenfels, Midwifery; (vacant), Surgery and Clinical Surgery; A. Fick, Physiology; C. Gerhardt, Medicine and Clinical Medicine, and Diseases of Children; G. E. Rindfleisch, Pathological Anatomy, General Pathology, and History of Medicine; J. Michel, Ophthalmic Surgery; A. Geigel, Clinical Medicine and Hygiene; M. Rossbach, Materia Medica. *Extraordinary Professors:* A. F. von Troltsch, Aural Surgery; W. Reubold, Forensic Medicine. Lectures are also given in the Philosophical Faculty by—*Ordinary Professors:* J. Sachs, Botany; J. Wislicenus, Chemistry; C. Semper, Zoology; F. Kohbrausch, Experimental Physics; and—*Extraordinary Professor:* L. Medicus, Chemistry.

AUSTRO-HUNGARIAN EMPIRE.

GRADUATION IN MEDICINE.

THE Universities of the Austro-Hungarian Empire which possess Medical Faculties and grant degrees in medicine are: Agram (Croatia), Gratz (Styria), Innsbrück (Tyrol), Cracow, Lemberg (Galicia), Pesth (Hungary), Prague (Bohemia), and Vienna.

All the Universities are under Government control, and the degree of Doctor of Medicine obtained at any of them alone gives the right to practise medicine in the empire.

The course of study required of candidates for the degree of Doctor of Medicine in the Universities of the Austrian Empire extends over five years, or five winter and five summer terms or *semesters*. The following arrangement is recommended by the Government. (The first, third, fifth, seventh, and ninth are winter *semesters:* the others are summer *semesters.*) 1st *Semester:* Systematic Anatomy; Experi-

mental Physics, Inorganic Chemistry; General Botany; Dissections. 2nd *Semester:* Systematic Anatomy (second part); Experimental Physics (second part); Organic Chemistry; Special Botany; Mineralogy; Practical Introduction to Chemical Analysis; Practical Introduction to the Use of the Microscope. 3rd *Semester:* Physiology; Histology; Medical Chemistry; Zoology; Dissections. 4th *Semester:* Physiology (second part); Embryology; Exercises in Physiology; in Histology; and in Medical Chemistry. 5th *Semester:* General Pathology and Therapeutics; Pharmacology; Pathological Anatomy; Pathological Histology; *Post mortem* Examinations; Practical Introduction to the Physical Examination of Patients. 6th *Semester:* Pathological Anatomy (second part); Special Pathology, Therapeutics, and Clinic of Internal Diseases; Special Surgical Pathology, Therapeutics, and Clinic; *Post mortem* Examinations; Exercises in Pathological Histology. 7th *Semester:* Special Pathology, Therapeutics, and Clinic of Internal Diseases; Special Surgical Pathology, Therapeutics, and Clinic; Diseases of the Eye; Exercises in Surgical Anatomy; (Operations). 8th *Semester:* Internal Diseases; Surgery or Diseases of the Eye; Surgical Operations; (Surgical Anatomy). 9th *Semester:* Internal Diseases; Surgery; Theory and Practice of Obstetrics and Gynæcology; Forensic Medicine; (Exercises in Obstetric Operations); Medico-Legal Exercises. 10th *Semester:* Clinics of Diseases of Children; of Diseases of the Skin; and of Syphilis; (Obstetrics and Gynæcology); Exercises in Obstetric Operations; (Medico-Legal Exercises). Of the subjects included in brackets, one course only is required, which may be attended in either a winter or a summer term, at the option of the student.

Candidates for the degree of Doctor of Medicine are required to undergo three examinations (*rigorosen*). Before being admitted, the candidate must produce (*a*) his certificate of birth or baptism, and evidence (*b*) of having received a sufficient preliminary education in one of the institutions of the countries comprised in the empire, or, if he do not belong to any of these, evidence of having matriculated as an ordinary student in a Faculty of Medicine; (*c*) evidence of having attended lectures in a medical school during at least four sessions, and of having dissected during two sessions; (*d*) of having passed, at one of the Universities of the empire, three examinations, in Botany, Zoology, and Mineralogy. Before being admitted to the second examination, he must produce evidence of having been engaged five years in professional study, and of having studied Clinical Medicine and Clinical Surgery, each during four sessions, and Clinical Ophthalmology and Clinical Midwifery, each during at least one session; and of having passed the first examination.

The first examination embraces Physics, Chemistry, Anatomy, and Physiology. There is a practical examination on Anatomy and Physiology, and a theoretical examination on all four subjects.

The second examination includes General Pathology and Therapeutics, Pathological Anatomy and Histology, Pharmacology (pharmacodynamics, toxicology, and prescribing), and the Pathology and Therapeutics of internal diseases. The candidate is examined practically in Pathological Anatomy (with preparations and on the dead body), and in Medicine (at the bedside); and theoretically in all the subjects.

The third examination embraces Surgery, Ophthalmic Surgery, Midwifery and Diseases of Women, and Forensic Medicine. The examinations in surgery, Ophthalmic Surgery, and Midwifery, are practical; and there are theoretical examinations in all the subjects.

All these examinations must take place at the same University. In very exceptional circumstances only is a candidate allowed to pass the second or third examination at another University than that at which he has passed the first.

The examinations are public, and are conducted by a President, the regular examiners, extraordinary examiners when required by the number of candidates, the Government commissioner; and at the second and third there is a co-examiner appointed by the Government. Each member of the commission examines for a quarter of an hour.

A candidate is not admitted to the theoretical examination unless he has satisfied the examiners in the practical one. If he fail at the practical examination, he may present himself again at the end of six months; if again rejected, six months must elapse before he can be again examined. A candidate rejected at the theoretical examination by one examiner only may be re-admitted to examination in the subject in which he is deficient, at the end of two months. If again rejected, he cannot be again examined in less than four months. If rejected at the theoretical examination by more than one examiner, he may re-appear a second and third time at intervals of six months. A rejected candidate can, however, be examined a third time, whether in practice or in theory, with the sanction of the minister of public instruction, and the consent of the college of professors; and if he then fail, he is debarred henceforth from obtaining a degree in medicine in any of the Universities of the empire.

The fee for the first examination is 55 florins, for the second 60 florins, and for the third 65 florins (Austrian). The promotion fees for the Doctorate amount to 60 Austrian florins. The total fee for the M.D. degree is about £23 of English money.

UNIVERSITY OF VIENNA.

IN this University, the Medical Faculty is constituted as follows. *Ordinary Professors:* E. von Brücke, Physiology; F. von Arlt, Ophthalmic Surgery; E. Albert, Practical and Clinical Surgery; C. Langer, Descriptive and Topographic Anatomy; C. R. Braun von Fernwald, Theory and Practice of Midwifery; H. von Bamberger, Special Medical Pathology, Therapeutics, and Clinical Medicine; H. Kundrat, Pathological Anatomy; H. Nothnagel, Special Medical Pathology and Therapeutics, and Clinical Medicine; J. Späth, Theory and Practice of Midwifery; C. Stellwag von Carion, Ophthalmic Surgery; Th. Billroth, Practical and Clinical Surgery; G. Braun, Midwifery (for Midwives); E. Hofmann, Forensic Medicine; I. Neumann, Syphilology; C. Wedl, Histology; S. Stricker, Experimental and General Pathology and Therapeutics; T. Meynert, Psychiatry and Nervous Diseases; A. E. Vogl, Pharmacology and Pharmacognosy; E. Ludwig, Chemistry; M. Kaposi, Diseases of the Skin, and Syphilis. *Extraordinary Professors:* E. Jäger von Jaxthal, Ophthalmic Surgery; J. Seegen, Balneology; C. Cessner, Use of Instruments and Bandages; H. Zeissl, Syphilology; M. F. Röll, Contagious Diseases; L. Schlager, Psychiatry; F. Muller, Veterinary Medicine; L. Dittel, Surgery; H. Widerhofer, Diseases of Children; M. Liedes-

dorf, Psychiatry; M. Schwanda, Medical Physics; M. Benedikt, Electro-Therapeutics and Neuro-Pathology; S. Stern, Elementary Clinical Instruction; A. Politzer, Aural Surgery; J. Grüber, Aural Surgery; J. Weinlechner, Surgery; G. Löbel, Clinical Medicine; S. L. Schenk, Embryology; A. Drasche, Epidemiology; A. R. von Mosetig-Moorhof, Surgery; J. Nowaf, Hygiene; C. Stoerk, Laryngoscopy; L. von Schrötter, Diseases of the Chest and Larynx; H. Auspitz, Diseases of the Skin and Syphilis; F. Salzer, Surgery; S. Exner, Physiology; M. Rosenthal, Diseases of the Nervous System; C. Mayrhofer, Midwifery and Gynæcology; G. Wertheim, Diseases of the Skin and Syphilis; S. von Basch, Experimental Pathology; T. Puschmann, History of Medicine; J. Schnitzler, Medicine; R. Chrobak, Gynæcology; K. von Rokitansky, Pathology; L. Bandl, Obstetrics and Gynæcology; E. von Stoffella, Special Pathology and Therapeutics. The following private teachers have the title of professor: A. Reder, Syphilis and Diseases of the Skin; L. Mauthner, Ophthalmic Surgery; C. Böhm, Surgery; L. M. Pollitzer, Diseases of Children; W. Winternitz, Medicine. There are also between eighty and ninety private teachers, adjuncts, and assistants. In the Philosophical Faculty, lectures on subjects connected with medicine are given by—*Ordinary Professors:* K. von Brühl, Zoology; L. K. Schmarda, Zoology; K. Claus, Zoology and Comparative Anatomy; J. Stefan, Physics; V. von Lang, Physics; J. Loschmidt, Physics and Chemistry; J. Wiesner, Vegetable Anatomy and Physiology; A. Lieben, Chemistry; L. Barth von Barthenau, Chemistry; A. Korner von Marilaun, Botany; J. Böhm, Botany. *Extraordinary Professors:* H. W. Reichardt, Botany; F. Brauer, Chemistry; F. Exner, Physics; E. Lippmann, Chemistry; E. von Somaruga, Chemistry.

The General Hospital (*Allgemeine Krankenhaus*) is capable of accommodating about 2,000 patients. There are two medical clinics, under Professors Duchek and von Bamberger; two surgical clinics, one of which is under Professor Billroth; a clinic for Diseases of the Eye, under Professors von Arlt and Stellwag von Carion; and three clinics for Obstetrics—two for students being under the charge of Professors Carl Braun-Fernwald and Späth, and one for Midwives under Professor Gustav Braun. The clinics for Diseases of Women are under the charge of Professors Braun-Fernwald and Späth. There are also special clinics for Syphilis, under Professor Sigmund; for Laryngoscopy, under Professor Schrötter; for Diseases of Children, under Professor Widerhofer; for Psychology, under Professor Meynert; and for Otology, under Professor Grüber. A considerable portion of the school is also situated within the hospital; thus there are the Pathological Museum and *post mortem* room, under the direction of the professor of Pathology; the room for medico-legal necropsies, under Professor Hofmann; the Institute for Experimental Pathology, under the direction of Professor Stricker; and the Institute of Chemical Pathology, under Professor Ludwig. The Anatomical Institute and Dissecting Room, under the direction of Professor Langer; the Physiological Institute, where the Practical Physiology is carried on under Professor Brücke; the Materia Medica Museum, and the Medical Library are outside the hospital, in the Alsergrund.

The great clinics on medicine, surgery, etc., are conducted during the two sessions, from the middle of October to the middle of March, and from the middle of April to the end of July. They are under the immediate direction of the Professors of the Medical Faculty, and constitute, of course, an essential part of the curriculum of study for the ordinary Austrian student.

The special courses of instruction are most numerous during the regular academical sessions, but there are always some going on, even in August and September. They last usually from four to eight weeks. The courses are given for the most part by the private lecturers and the professors' assistants, and the material for them is derived from the wards of the clinical professors. For a six or eight weeks' course, the fee is usually from fifteen to twenty florins. The instruction in them is demonstrative or practical, involving the use of instruments and apparatus by the students themselves. Clinical instruction on children's diseases is given at the St. Anne's Hospital. This and many other of the courses are often attended by students for a second or even third time. A student desirous of occupying his time to the best advantage at Vienna must be prepared to expend a considerable sum in fees.

Vienna affords great opportunities for the study of pathological anatomy. There are separate *post mortem* rooms for the cases from the clinical wards, medico-legal cases, and the ordinary cases. At the two former, the clinical professor or assistant is usually in attendance. The examinations go on all the morning, there being sometimes as many as a dozen in one day.

Besides the General Hospital, Vienna possesses the Wieden Hospital (600 beds), the Rudolf Institution for the Sick (*K. K. Krankenhaus Rudolfstiftung*) (860 beds), the Lunatic Asylum, the General Polyclinic or Dispensary, the Lying-in Hospital, the Leopoldstädt Children's Hospital (90 beds), the Crown Prince Rudolf Children's Hospital (40 beds), St. Joseph's Children's Hospital at Wieden (100 beds), St. Anne's Children's Hospital (100 beds), etc.

UNIVERSITY OF BUDA-PESTH.

The Medical Faculty of this University consists of the following professors. *Ordinary Professors:* J. Lenhossek, Anatomy; G. Mihalkovics, Anatomy; G. Scheuthauer, Pathological Anatomy; E. Jendrassik, Physiology; K. Balogh, Pharmacognosy and General Pathology; T. A. Lumnitzer, Surgery; T. Kézmarszky, Obstetrics; J. Wagner and F. Koranyi, Medicine and Clinical Medicine; J. Kovacs, Surgery; W. Schulek, Ophthalmic Surgery; (vacant), Forensic Medicine; J. Fodor, Hygiene; J. Bókai, Diseases of Children; T. Margó, Histology; A. Török, Anthropology. *Extraordinary Professors:* L. Gebhardt, Diseases of the Chest; E. Poor, Diseases of the Skin; E. Navratil, Rhinoscopy and Laryngoscopy; T. Bakody, P. Plósz, Physiological and Pathological Chemistry; D. Nedelko, Dental Surgery; J. Böke, Aural Surgery; E. Schwimmer, Diseases of the Skin and Syphilis; C. Laufenauer, Psychiatry. There are several *docents.*

UNIVERSITY OF CRACOW.

The Medical Faculty of this University consists of the following professors, with several *docents. Ordinary Professors:* E. Korczynski, Special Pathology and Therapeutics; — Rydygier, Surgery; J. Mikulicz, Surgery; G. Piotrowsky, Physiology and Histology; L. Teichmann, Descriptive Anatomy; M.

Madurowicz von Jelita, Midwifery and Gynæcology; S. Janikowski, Forensic Medicine; L. Rydel, Ophthalmic Surgery; A. Stopczanski, Medical Chemistry; A. Adamkiewicz, General and Experimental Pathology; L. Blumenstock, Forensic and State Medicine; T. Browicz, Pathological Anatomy. *Extraordinary Professors:* A. Rosner, Diseases of the Skin and Syphilis; J. Oettinger, History of Medicine; M. L. Jakubowski, Diseases of Children; S. Domanski, Diseases of the Nervous System. There are also several *privat-docents* and assistants.

UNIVERSITY OF GRATZ.

In this University, the Medical Faculty consists of the following professors, with about 12 *docents. Ordinary Professors:* A. Schauenstein, Forensic Medicine; E. Zuckerkandl, Descriptive and Topographical Anatomy; K. von Rzehaczek, Surgery: C. von Helly, Midwifery and Gynæcology; A. Rollett, Physiology and Histology; C. Blodig, Ophthalmic Surgery; O. Rembold, Medicine; J. Eppinger, Pathological Anatomy; C. von Schroff, Materia Medica and Therapeutics; C. B. Hoffmann, Medical Chemistry; V. von Ebner, Histology and Embryology; R. von Krafft-Ebing, Psychiatry. *Extraordinary Professors:* J. von Koch, Epidemic Diseases and Sanitary Police; E. Lipp, Diseases of the Skin; R. Klemensiewicz, Experimental and General Pathology; E. Börner, Obstetrics and Gynæcology.

Connected with the University are anatomical, physiological, pathological, and zoological institutes; medical, surgical, ophthalmic, obstetric, and gynæcological clinics; a laboratory for physiological and pathological chemistry; a chemical laboratory, etc. The hospitals are: the general hospital (700 beds); a lying-in hospital (120 beds); the town hospital (80 beds); a children's hospital (80 beds); and two infirmaries (245 beds).

UNIVERSITY OF INNSBRUCK.

The following professors belong to the Medical Faculty. *Ordinary Professors:* M. Holl, Anatomy; F. Schauta, Obstetrics and Gynæcology; A. Tschurtschenthaler, General Pathology and Pharmacology; M. von Vintschgau, Physiology; F. Schott, Pathological Anatomy; C. Nicoladoni, Clinical Surgery; I. Schnabel, Ophthalmic Surgery; P. von Rokitansky, Medicine; W. Löbisch, Medical Chemistry. *Extraordinary Professors:* F. Wildner, Veterinary Medicine; J. Oellacher, Histology and Embryology; E. Lang, Syphilology and Dermatology; M. Dietl, Experimental Pathology.

The ordinary laboratories, clinics, and other means of practical instruction, are possessed by this University. There are a general hospital (204 beds) and a lying-in hospital (130 beds).

UNIVERSITY OF KLAUSENBURG.

The Medical Faculty of this University consists of the following professors. *Ordinary Professors:* L. Davida, Anatomy; F. Klug, Physiology; A. Genersich, Pathology; A. Högyes, Pharmacy; S. Purjesz, Medicine; J. Brandt, Surgery; A. Szilágyi, Ophthalmic Surgery; J. Maizner, Obstetrics; A. Ajtai, Forensic Medicine; E. Geber, Diseases of the Skin and Syphilis; Rószahegyi, Hygiene. *Extraordinary Professor:* J. Ossikovsky, Chemistry and Toxicology.

UNIVERSITY OF PRAGUE.

The Medical Faculty of this University consists of the following professors, with several *docents. Ordinary Professors:* Th. Eiselt and A. Pribram, Clinical Medicine; C. Gussenbauer, Surgery and General Surgery; J. Halla, Clinical Medicine; J. Streng, Midwifery; S. Strupi, Veterinary Medicine; J. Hasner von Artha, Ophthalmic Surgery; Ph. Knoll, General Pathology and Therapeutics; J. Maschka, State Medicine; E. Hering, Physiology; F. Weber von Ebenhof, Midwifery; C. H. Huppert, Medical Chemistry; A. Breisky, Midwifery; C. Toldt, Anatomy and Histology. *Extraordinary Professors:* J. Lerch, Forensic, Physiological, and Pathological Chemistry; G. Ritter von Rittershain, Diseases of Children; J. Kaulich, Diseases of Children; S. Mayer, Physiology; P. J. Pick, Skin Diseases and Syphilis; E. Zaufal, Aural Surgery; J. Fischel, Psychiatry; H. Chiari, Pathological Anatomy; W. Weiss, Surgery; C. Weil, Surgery; O. Kahler, Special Pathology and Therapeutics; F. Ganghofner, Special Pathology and Therapeutics; A. Ott, Special Pathology and Therapeutics.

Connected with the University are an anatomical theatre; pathological, physiological, medico-chemical, and zoo-chemical institutes; medical, surgical, ophthalmic and dermatological clinics (one of the medical clinics being Bohemian); obstetric clinics for practitioners and for midwives, etc. The hospitals are: the General Hospital (948 beds), with the affiliated Hospital of the Bohemian sisters (220 beds): the Franz-Josef Children's Hospital (100 beds); the Israelite General Hospital (52 beds); the Hospital of the Brothers of Mercy (166 beds); the Hospital of the Elizabethan sisters (60 beds); the Public Lunatic Asylum (1,348 beds); the Lying-in Hospital (322 beds for mothers and 176 for children).

SWITZERLAND.

GRADUATION IN MEDICINE.

In Switzerland, degrees in Medicine are granted in the Universities of Basle, Berne, Geneva, and Zürich. These degrees do not confer a licence to practice, for which a separate examination is required.

UNIVERSITY OF BASLE.

The degree of Doctor of Medicine, Surgery, and Midwifery, granted by this University, can only be obtained with the fulfilment of the following conditions.

1. Application for admission to the examination must be made to the Dean of the Faculty, in writing, enclosing: *a.* A *curriculum vitæ*; *b.* The academical matriculation of this place; *c.* Certificates of attendance at the academical lectures; *d.* A certificate of conduct from the High School in which the candidate has made his principal studies; *e.* A scientific treatise on any subject he chooses within the sphere of medical or natural science. 2. The examination is partly written (*tentamen*) and partly verbal (*rigorosum*). 3. The written examination consists in the answering of five questions having reference to Anatomy, Physiology, Pathological Anatomy and Pathological Physiology, Special Pathology and Therapeutics, and Surgery. 4. In case of rejection, the Faculty can appoint a time for

a repetition of the examination, before which time the candidate cannot be re-examined. 5. The whole of the professors of the Faculty are invited to the verbal examination. The following are the subjects: Anatomy, Physiology, Pathological Anatomy and Physiology, Special Pathology and Therapeutics, Materia Medica, Surgery, Midwifery. 6. The examination by one examiner must not last longer than half an hour. The degrees in which doctorships are granted are *Summâ cum laude*, *Insigni cum laude*, *Magnâ cum laude*, *Cum laude*, and *Rite's* 8. In adjudicating on both the written and verbal examination, not only will the special knowledge in the respective branches be taken into consideration, but also the possession of a general scientific knowledge, and especially a comprehensive knowledge of Natural Science. 9. One hundred and twenty copies of the treatise must be delivered to the Faculty. 10. Promotions are not granted to applicants who have not passed the examinations here; but the Faculty can confer the degree of doctor on notable and eminent physicians *honoris causâ*. 11. The fees for the examination amount to 350 *francs*, viz., 100 for the *tentamen*, 200 for the *rigorosum*, and 50 for the promotion. 12. If the candidate be rejected after either examination, he forfeits the fees. The re-examination is free of charge.

The following are professors in the Medical Faculty of this University. *Ordinary Professors:* F. Miescher, senior, Pathological Anatomy; L. Rütimeyer, Comparative Anatomy and Zoology; A. Socin, Surgery and Clinical Surgery; H. Immermann, Medicine and Clinical Medicine; J. Kollmann, Anatomy; J. J. Bischoff, Obstetrics and Gynæcology; F. Miescher, junior, Physiology and Physical Chemistry; M. Roth, General Pathology and Pathological Anatomy; L. Wille, Psychiatry; H. Schiess, Ophthalmic Surgery. *Extraordinary Professors:* I. Hoppe, Therapeutics; E. Hagenbach-Burckhardt, Diseases of Children; R. Massini, Polyclinic and Prescribing; A. Burckhardt-Merian, Diseases of the Ear; C. Schulin, Histology. There are also several private teachers. Lectures on subjects connected with Medicine are given in the Mathematical and Scientific Department of the Philosophical Faculty by—*Ordinary Professors:* E. Hagenbach-Bischoff, Experimental Physics; J. Piccard, Chemistry; and H. Vöchting, Botany. *Extraordinary Professor:* F. Krafft, Chemistry.

Connected with the University are the town hospital, where clinics for medicine, surgery, diseases of the eye, mental diseases, and midwifery are conducted; a hospital for diseases of children, and institutions for practical instruction in physiology, pathology, chemistry, and botany.

UNIVERSITY OF BERNE.

Before admission to examination for the Degree in Medicine and Surgery, the candidate must submit to the Faculty of Medicine a manuscript dissertation of scientific value. If this be accepted, he must, after producing evidence of general, scientific, and medical education, be examined *vivâ voce* in Anatomy, Physiology, Pathological Anatomy, Legal Medicine, General Pathology and Medicine, Surgical Pathology and Surgery, Materia Medica, and Ophthalmology.

The Medical Faculty of this University is constituted of the following professors and about thirteen *docents*. *Ordinary Professors:* P. Grützner, Physiology; C. Emmert, Forensic Medicine and Hygiene; C. Aeby, Human and Comparative Anatomy; T. Kocher, Surgery; T. Langhans, Pathological Anatomy; L. Lichtheim, Medicine; P. Müller, Midwifery; A. Vogt, Hygiene; E. Pflüger, Ophthalmic Surgery; M. von Nencki, Physiological Chemistry. *Extraordinary Professors:* E. Schärer, Psychiatry; R. Demme, Diseases of Children. There are several private teachers. Instruction in subjects connected with medicine is also given in the Mathematical and Scientific Department of the Philosophical Faculty by—*Ordinary Professors:* V. Schwarzenbach, Chemistry and Pharmacy; L. Fischer, Botany; A. Forster, Experimental Physics; T. Studer, Zoology.

Medical, surgical, obstetric, and special clinics, and physiological, pathological and clinical laboratories, etc., are connected with the University.

UNIVERSITY OF GENEVA.

The University of Geneva grants the degrees of Bachelor in Medical Science and Doctor of Medicine.

The following classes of persons are admitted as students in the Faculty of Medicine: 1. Bachelors in Letters; 2. Bachelors in Science; 3. Students who have attended during two years' lectures in the Section of Philosophy, and have undergone the examinations at the end of each year; 4. Pupils from the Classical Section of the Gymnasium, with certificates of Studies; 5. Swiss and strangers who give evidence of their studies by means of diplomas or certificates; 6. Persons who undergo satisfactory oral examinations in the subjects comprehended in the classical section of the Gymnasium. 7. Persons who furnish evidence that they have studied abroad, for a year at least, in a corresponding faculty, may be inscribed in the Faculty of Medicine.

The course of study is as follows: *First Year: Winter Session:* Botany (first part); Physics (first part); Comparative Anatomy or Zoology; Inorganic Chemistry; Practical Comparative Anatomy. *Summer Session:* Botany (second part); Physics (second part); Comparative Anatomy or Zoology; Organic Chemistry (first part); Practical Chemistry; Botanical Excursions. *Second Year: Winter Session:* Descriptive Anatomy (first part); Physiology (first part); Organic Chemistry (second part); Dissections. *Summer Session:* Descriptive Anatomy (second part); Physiology (second part); Practical Chemistry and Practical Comparative Anatomy. (Students are recommended to attend, in addition, courses of other subjects, such as Astronomy, Geography, Physics, Mineralogy, Geology, etc.) *Third Year: Winter Session:* Descriptive Anatomy (third part); Normal Histology; Dissection. *Summer Session:* Regional Anatomy; Embryogeny. Supplementary courses on subjects of the preceding years, on which the student's knowledge is weak; Practical Physiology, Histology, Comparative Anatomy, and Chemistry. (The examination for Bachelor in Medical Sciences is now undergone.) *Fourth Year: Winter Session:* General Pathology; Internal Pathology; External Pathology; Dissection of Regions; Medical and Surgical Hospital Practice. *Summer Session:* Special Pathological Anatomy; Pathological Histology; Internal Pathology; External Pathology; Pharmacology; Medical and Surgical Hospital Practice; Exercises in the Laboratory of Pathological Histology. *Fifth Year: Winter Session:* Therapeutics; Hygiene; Legal Medicine; Theory of Obstetrics; Internal Pathology; External Pathology and Operations; Medical and

Surgical Hospital Practice. *Summer Session:* Therapeutics; Legal Medicine; Internal Pathology; External Pathology; Medical and Surgical Hospital Practice; Operations. *Sixth Year: Winter and Summer Sessions:* Medical, Surgical, and Obstetrical Hospital Practice; Polyclinic; Ophthalmology; Psychology, etc. Repetitions preparatory to the examination for the Doctorate.

Persons who have satisfied the conditions laid down regarding the admission of students to the Faculty of Medicine may become candidates for the degree of Bachelor in Medical Science. Students who have undergone the recognised annual examinations in the Faculty of Medicine or of Sciences are exempt from oral examinations in the subjects in which they have already been examined; provided that the examinations have been undergone not more than two years previously. Persons who produce diplomas or certificates giving evidence of their studies may be exempted from further examinations in the subjects in which they have already passed.

The following may become candidates for the degree of Doctor of Medicine: 1. Bachelors in Medical Science; 2. Persons who produce diplomas or certificates indicating that they have gone through an equivalent course of study. There are five examinations for the degree of Doctor of Medicine. *First Examination:* Human Anatomy and Histology; Physiology; Pathological Anatomy and General Pathology; a Necropsy, for which one hour is allowed; making an Anatomical Preparation, for which four hours are allowed. *Second Examination:* Medicine; Surgery; Operative Surgery; three Operations, and Application of Bandages. *Third Examination:* Hygiene; Therapeutics; Materia Medica and Pharmacology; Legal Medicine; a Medico-Legal Report on a real or supposed case, for which one hour is allowed. *Fourth Examination:* Clinical Examination of two medical and two surgical patients and of one case of labour (fifteen minutes being allowed for each case); Obstetrics, with operations on the mannikin; Discussion on each Clinical Case; Written Commentary on a Medical and a Surgical Case, two hours being allowed. *Fifth Examination:* Defence of a Printed Dissertation, in the French language, on a subject in medical science chosen by the candidate, and previously communicated to the Faculty.

The examinations are public. Those for the degree of Bachelor are held at the beginning and end of the University year, and in the interval between the sessions. Application for admission must be made to the Dean of Faculty of Medicine eight days before the day of examination. The examinations for the degree of Doctor take place, on the demand of the candidates, at times determined by the Faculty.

Before being admitted to examination, each candidate pays to the beadle 40 *francs;* and after the last examination, 100 *francs* must be paid to the Faculty of Medicine. In case of unsatisfactory examination, half of the first fee is returned, and the second is not paid.

UNIVERSITY OF ZURICH.

THE following are the regulations for the degree of Doctor of Medicine.

1. In order to obtain the degree of Doctor of Medicine, the candidate must send to the Dean a written memorial, accompanied by (*a*) evidence of attendance on lectures of Physics, Chemistry, Botany, Zoology, and Medical Subjects; (*b*) a dissertation on some subject in medical science, which, after approval, the candidate must have printed at his own expense.

2. The dissertation is delivered by the Dean for examination to the teacher of the subject of which it treats, or to the member of the Faculty at whose suggestion it has been composed. A recommendatory opinion of the first examiner decides its acceptance; in this case, his name appears on the title when it is printed. If the first opinion be doubtful or unfavourable, the thesis must be circulated among all the members of the Faculty, and is only accepted if two-thirds of them give their written votes in its favour.

3. When the dissertation is approved, the candidate is admitted to examination for the degree. The first part is written, and the candidate has to answer two questions drawn by lot, one on Anatomy and Physiology, the other on Pathology and Therapeutics, Surgery, or Midwifery. The answers are circulated among the members of the Faculty, who, after examining them, express in writing their determination (by a simple majority) whether the candidate shall be admitted to the second (oral) examination. The oral examination comprises the abovenamed subjects, and also General Anatomy, Pathological Anatomy, Materia Medica, and Ophthalmic Medicine. The votes of two-thirds of the members of the Faculty present is necessary for the passing of this examination.

4. After the examination has been passed and two hundred printed copies of the dissertation have been delivered, an official diploma is delivered in duplicate to the candidate; all other ceremonies are dispensed with.

5. The fee consists of 350 *francs* (£14), and 15 *francs* to the bedell; it is paid before the oral examination (if this be remitted, before graduation). There is no additional fee if it be necessary to repeat the examination. The fee is not returned if the candidate be definitely rejected. The sum of 100 *francs* is remitted to candidates who already possess a recognised diploma; and, in such cases, the Faculty may, by a majority of two-thirds, agree to omit the oral examination.

6. The faculty has the power of granting the diploma of doctor *honoris causâ* for distinguished services to medicine.

The Medical Faculty consists of the following Professors, with several *docents*: *Ordinary Professors*—H. Meyer, Human Anatomy; H. Frey, Comparative Anatomy, and Zoology; U. Krönlein, Surgery and Clinical Surgery; L. Hermann, Physiology; E. Klebs, Pathology; G. Huguenin, Medicine; F. Horner, Ophthalmic Surgery; O. Wyss, Diseases of Children; E. Frankenhäuser, Obstetrics and Gynæcology; A. Forel, Mental Diseases. *Extraordinary Professor*—H. Spöndly, Obstetric Medicine. Lectures are given in the Philosophical Faculty by *Ordinary Professors*—V. Merz, Chemistry; C. Cramer, Botany: *Extraordinary Professors*:—J. K. Hofmeister, Experimental Physics; A. Dudel-Port, Chemistry. A Hospital, Lying-in Hospital, Children's Hospital, Pathological, Physiological, and Chemical Laboratories, are connected with the University.

THE LICENCE TO PRACTISE MEDICINE.

The following are the regulations for the licence to practise medicine in Switzerland. One licensing body examines at Geneva, and the other at Basle, Berne, and Zürich; both have the same regulations, and grant the licence to practise in all parts of the republic.

There are two examinations, preliminary and final. At Geneva, candidates are admitted to the preliminary examination on producing one of the following certificates: 1. Bachelier ès lettres; 2. Bachelier ès sciences: 3. Certificates of having passed two examinations in the Section of Philosophy at Geneva, and of having previously taken not less than twenty hours per week of studies. 4. Certificates of foreign studies at the Classical Section of the Gymnasium at Geneva; 5. Certificates of foreign studies equivalent to those named above. At the Amalgamated Board of Basle, Berne, and Zürich, candidates must produce evidence of complete and satisfactory studies in a public school; and of attendance on courses of Anatomy, Chemistry, Physics, Physiology, Practical Physiology, and six months' work in a Chemical Laboratory.

The examination is written and oral. The written part consists in producing two dissertations, one in Physics or Chemistry, the other in Anatomy or Physiology. The oral examination comprises Botany, Zoology, and Comparative Anatomy, Physics, Anatomy, and Physiology. At Geneva, candidates who have passed this examination are entitled to the designation of Bachelor of Medical Science.

In order to be admitted to the Final Examination for the Licence, candidates at Geneva must produce the certificate of Bachelor of Medical Science, and diplomas and certificates obtained after equivalent studies and examinations elsewhere. At the other Board, they must produce evidence of having passed the Preliminary Examination, and of having attended the following academic courses: Pathological Anatomy, Medicine, Practical Surgery and Bandaging (six months), Clinical Medicine and Clinical Surgery (each three sessions), Clinical Midwifery (two sessions), and Clinical Ophthalmic Medicine (one session).

The examination is written, practical, and oral. The written and practical part consists of—1. Examination of two Medical and two Surgical cases, and one of Midwifery, in the presence of two examiners; 2. Written opinion of one of two Medical and two Surgical cases; 3. A *post mortem* Examination, and opinion on the same; 4. Performance of two Operations: one the tying of an artery; the other according to the judgment of the examiners. The *viva voce* examination comprises: 1. General Pathology and Pathological Anatomy; 2. Special Pathology and Therapeutics; 3. Hygiene; 4. Pharmacology; 5. Surgery; 6. Topographical Anatomy, with Operations; 7. Ophthalmology; 8. Midwifery; 9. Ordinary Medical Practice.

DENMARK.

MEDICAL EDUCATION & GRADUATION.

THE study of Medicine at the University of Copenhagen is open to any student who has matriculated there or in foreign Universities; but only Danish subjects can obtain through examination the right to practise as medical men in the country.

The course of study is divided into three parts, namely, an introductory and two principal courses.

1. The introductory part consists of Botany (with especial regard to medicinal plants), Physics, Zoology, and Chemistry, theoretical and practical. The student has to submit to a preliminary examination on these subjects, and he can then enter as a pupil of one of the hospitals, where he must attend in a fixed order, and for a certain time, the various wards.

2. The second course comprises Anatomy, Physiology, Pharmacology, and Dissections, in which the student has to submit to an examination.

3. The final course consists of the following: Theoretical Surgery, Clinical Surgery, Operative Surgery, Theory of Medicine, Clinical Medicine, Pathological Anatomy, General Pathology, Forensic Medicine, and Obstetric Medicine. The student is examined on these subjects, and has to present a written thesis in Medicine, and one on Surgery. Before the student can pass his examination in this concluding course, he must present a certificate showing that he has gone through a half-yearly Clinical course of study under the chief Physicians at the hospital in Surgery, Medicine, Skin-Diseases, and Syphilis; and a shorter course at the Lying-in Institution in Obstetrics and Diseases of Children.

When these examinations are taken, the obligatory course of study is concluded by a residence at the Lying-in Institution, in order to obtain a practical knowledge of operations in cases of abnormal labours. The candidate who has passed his examination has now a right to practise medicine; but the majority of candidates, before commencing to practise, endeavour to obtain an appointment at one of the hospitals, where they do duty during two years in a subordinate position. The entire course of study generally covers a period of from six to seven years.

In order to obtain the degree of Doctor of Medicine, the candidate has to prepare and submit to the Medical Faculty a treatise on a medical subject chosen by himself. If it be accepted by the Faculty, it is printed, and must be defended by the author publicly at the University, when at least two professors of the Medical Faculty appear as opponents. At most only about 10 per cent. of the medical men in Denmark endeavour to obtain this degree.

Among other means for aiding the labours of the student at the University are: The Botanical Gardens, a Zoological Museum, a Chemical Laboratory, a Collection of Physical Instruments, an Anatomical Museum, Dissecting Rooms (Physiological Collection and Laboratory), Pharmacological Collection, Collection of Surgical Instruments, Pathological Museum, the Copenhagen hospitals and the Lying-in Institution.

No entrance fees are demanded, and all the lectures are free to the students. The fees payable in respect of the several examinations amount in all to 60 *Kroner* (about £3 10s.) The expenses in connection with obtaining the degree of Doctor of Medicine amount to 160 *Kroner* (about £9).

Ten professors are attached to the University, namely: two in Medicine (Theoretical and Clinical), two in Surgery (Theoretical and Clinical), one in Pathological Anatomy, one in Obstetric Medicine and Diseases of Women and Children, one in Nor-

mal Anatomy, one in Physiology, one in Pharmacology and Materia Medica, one in Forensic Medicine, Hygiene, and Psychiatry, beside a permanent *docent* for Syphilis and Skin-Diseases.

In addition, lectures are given by the chief physicians attached to the various wards of the hospitals. Six of the professors of the University act as chief physicians in the Copenhagen hospitals.

SWEDEN.

MEDICAL EDUCATION.

THERE are three medical institutions in Sweden which confer licences to practise, viz., in the Universities of Upsala and Lund, and the Karolina Medico-Chirurgical Institute or Academy of Medicine in Stockholm. The Universities also confer the degree of Doctor of Medicine. A Medical School, with professors of the various branches of medical science, is connected with each.

The three institutions possess museums of normal and pathological anatomy, collections of chemical and pharmaceutical preparations and drugs, of surgical and obstetric instruments, physiological and pathological laboratories, etc.

Upsala possesses a hospital of 150 beds, which is entirely at the disposal of the University for the purpose of clinical teaching. The professors of medicine and surgery are *ex officio* medical officers of the hospital. Of the 150 beds, 100 or a few more are generally occupied, and are divided among medical, surgical, syphilitic and obstetric cases.

In Lund, clinical instruction is given in the State Hospital, and also in the University Hospital. In the latter, there are 80 beds for medical and 80 for surgical cases, with 67 beds in the syphilitic and 8 in the obstetric departments. Of these, 40 beds in the medical and 40 in the surgical department are appropriated to clinical instruction. The obstetric department is also clinical. Clinical instruction in the diseases of the eye is also given.

In Stockholm, the pupils of the Karolina Institution receive clinical instruction at the Seraphim Hospital, the Children's and Lying-in Hospitals, the Town and State Lock Hospital, and the Lunatic Asylum at Konradsberg.

At the Seraphim Hospital, there are two medical and two surgical wards, under the charge of the ordinary and adjunct professors of medicine and surgery; and also a small gynæcological ward. It contains about 300 beds. An ophthalmic clinic is comprised in the surgical department; and the gynæcological clinic is attached to the medical.

The Lying-in Hospital or Obstetric Clinic can accommodate 30 patients; 20 beds are generally occupied. The professor of obstetrics in the Karolina Institution is *ex officio* chief physician.

The whole of the cases in the General Orphan Hospital are available for clinical instruction. The daily number of infants under one year old in the institution is from 100 to 200; sometimes it has been as high as 240. Of these 10 or 12 per cent. are generally on the sick-list. There are also about 80 children between one and fifteen years of age. In addition, from 1,600 to 2,000 are attended yearly as out-patients. Clinical Instruction is given by the professor of diseases of children for eight months in the year, and four months by his adjunct.

The Town and State Lock Hospital has 180 beds, of which, on an average, 140 are occupied daily.

The Hospital for the Insane at Konradsberg has 220 beds, which are all available for clinical instruction. The professor of psychological medicine in the Karolina Institute is the chief physician.

LICENCE AND DEGREE IN MEDICINE.

No one can practise medicine in Sweden who has not obtained a licence from one of the three boards. The examinations for the licence consist of two parts. The first, for the Diploma of Candidate in Medicine (analogous to *Officier de Santé* in France), embraces Anatomy, Physiology, Medical Chemistry, Pharmacology, General Pathology, and History of Medicine. The candidate must, after passing the maturity examination on leaving a lyceum, have undergone a preliminary (medico-philosophical) examination in Botany, Zoology, Chemistry, and Physics, or have passed an examination as candidate in Philosophy. He must also have followed the practical laboratory courses of Chemistry, Physiology, and normal and morbid Anatomy. The examination for the licence comprises Medicine, Diseases of Children, Surgery, Obstetrics and Gynæcology, Pathological Anatomy, and Forensic Medicine. The candidate must have passed the examination for Candidate in Medicine, and must subsequently have attended the clinics of Medicine, Surgery, Obstetric Medicine, Diseases of Children, Syphilis, and Diseases of the Mind; and must have obtained a competent knowledge of Pharmacy. Attendance on oral lectures is not obligatory.

The degree of Doctor of Medicine is conferred by the Universities of Lund and Upsala on Licentiates of those Universities and of the Academy at Stockholm, on their presenting and defending a thesis. Attendance on lectures is obligatory for the Degree.

NORWAY.

MEDICAL EDUCATION.

IN the University of Christiania, which is the only School of Medicine in Norway, lectures are delivered on the following subjects: Surgery, Ophthalmic Surgery, Physiology, Midwifery and Diseases of Women and Children, Descriptive Anatomy, Forensic Medicine, Pathology and Therapeutics, Hygiene, Materia Medica, General Pathology and Pathological Anatomy, Surgical Pathology, Zoology, and Chemistry. Clinical instruction is given in the General Hospital on Surgery, Ophthalmic Surgery, Medicine, Diseases of the Skin and Syphilis; at the Lying-in and Children's Hospital, on the Diseases of Women and Children; at the Ganstead Asylum and at the Christiania Lunatic Asylum, on Mental Diseases; and in the Town Hospital, on Chronic Diseases. Practical instruction is also given in Chemistry, Anatomy, and Botany.

LICENSES AND DEGREES.

Before entering on the study of medicine, the candidate has to pass two preliminary examinations: one in Arts, including Norwegian, Latin, Greek, French, German, English, Mathematics, Geography, and History; and one in Philosophy, including Geometry, Zoology, Botany, Astronomy,

and the elements of Chemistry and Physics. Having passed these, he is admitted to matriculation, and afterwards studies Medicine nearly seven years.

There are three professional examinations. The first is held two and a half years after Matriculation, in Anatomy, Dissections, the use of the Microscope, Physiology, and Medical Physics. The second, held three and a half years after the first, includes Pharmacology, Toxicology, Medicine, Therapeutics, General Pathology, Pathological Anatomy, Surgery, Ophthalmic Surgery, Skin-Diseases, and Syphilis. The third examination, held about a year after the second, comprises Surgical Anatomy, Surgery, Operative Surgery, Obstetrics and Gynæcology, Diseases of Children, Forensic Medicine, Hygiene, and a Practical Examination in Medicine and Surgery. Practical work in the Hospital Wards is also obligatory.

On passing the final examination, the candidate becomes a physician, and obtains the right to practise. To obtain the degree of Doctor, he must pass a further examination, and defend a thesis.

HOLLAND.

DEGREE OF DOCTOR OF MEDICINE.

The degree of Doctor of Medicine is granted in Holland by the Universities of Groningen, Leyden, and Utrecht. Candidates for matriculation must produce evidence of gymnasial maturity, or undergo an equivalent examination. The course of study, including laboratory work and hospital practice, extends over six years. The final examination embraces all the subjects of medical study and the presentation and defence of a thesis. The degree does not grant a license to practise.

STATE EXAMINATION.

This examination is conducted by eight professors, appointed annually and paid by the government. The applicant for admission must be a Doctor of Medicine of some University, or possess a certificate of gymnasial maturity, or pass a preliminary literary and philosophical examination. The course of medical study must extend over at least six terms. The medical examination includes General and Special Pathology, Pharmacology, Morbid Anatomy, Medical Jurisprudence, Clinical Medicine, Clinical Surgery, and Obstetrics.

BELGIUM.

GRADUATION IN MEDICINE.

Degrees in Medicine are granted by the Universities of Brussels, Ghent, Liège, and Louvain. The Universities of Brussels and Louvain confer only scientific titles, without license to practise; the degrees of the other two, when legalised by a Government commission, give the right of practice in Belgium.

UNIVERSITY OF BRUSSELS.

By the regulations of the University of Brussels, British and other medical practitioners, provided with proper qualifications, are admitted to examination before the Faculty for the degree of M.D. Residence is not required from such as are unable to absent themselves long by reason of their professional occupations.

Candidates must come in person and have their names inscribed in the books of the University. The fees are, for inscription of name, 215 fr. (£8 12*s.*); for examinations, 315 fr. (£12 12*s.*); for registration of diploma, 10 fr. (8*s.*); total, 540 fr. (£21 12*s.*) The examination consists of three parts. 1. General Therapeutics, including Pharmaco-dynamics (proportions of doses), Special Pathology and Therapeutics of Internal Diseases, General Pathology, and Pathological Anatomy. 2. Surgical Pathology, Ophthalmic Surgery, Theory of Midwifery, Public and Private Hygiene, Medical Jurisprudence. Examination at the Hospital of one or two patients under Medical and Surgical Treatment; Examination in Midwifery, consisting in Obstetrical Operations on the *mannequin* (model of pelvis); Examination in Operative Surgery, consisting of some of the usual operations on the dead subject, such as amputation, ligature of an artery, etc.

Great importance is attached to practical knowledge, but candidates must also prove that they possess positive theoretical science.

Examinations take place at any time between October 15th and June 20th, except during Christmas and Easter. They are *vivâ voce* and written, but candidates may be exempted from the former and confine themselves to the written tests by paying an additional fee of £1 for each test. Candidates must exhibit their qualifications or diplomas.

The three examinations may be got through in a week, allowing a day's interval between each two tests. Saturday is the most eligible day for arriving, for candidates for whom time is an object. The delay of a week is, however, never exceeded by more than a day or two.

The examinations are conducted in English through the medium of an interpreter, for such candidates as are not familiar with the French language.

Candidates who are not foreign qualified medical men must undergo the above-mentioned examinations, and also an examination in Anatomy, Physiology, and Histology, and must produce a degree in Arts or Science from a recognised University, or pass a preliminary examination; they must also have attended for five years the lectures in a medical college, or for three years the medical and surgical practice of a hospital.

UNIVERSITY OF GHENT.

A candidate for matriculation at this University must be a graduate in Arts of some University, or must pass a preliminary examination. He must then attend for two years a scientific course, including, Psychology, Chemistry, Physics, Botany, Zoology, and Mineralogy, and at the end of the time pass an examination in these subjects. After this, he must attend lectures for five years, and hospital practice for three years.

The following examinations must be passed: 1. At the end of the second year of medical study, in Descriptive Anatomy, Histology, Physiology, Pharmacology, and Comparative Anatomy; 2. At the end of the fourth year, in General Pathology, Therapeutics, Theory and Practice of Medicine, and Morbid Anatomy; 3. At the end of the fifth year, in Theory and Practice of Surgery and in Obstetrics. The final examination for the Doctorate includes the

general subjects of medical study, with practical examinations in Clinical Medicine, Clinical Surgery, Obstetrics, and Operative Surgery. Candidates who have attended the requisite lectures and hospital practice elsewhere are admitted to the final examination if they possess a degree in Arts or pass the matriculation examination of the University.

UNIVERSITY OF LIÈGE.

THE University grants a degree in Medicine, Surgery, and Midwifery, which can only be obtained after passing three examinations, in the French language, in natural sciences and medical subjects.

The first examination includes the following subjects: General Chemistry, Logic, Psychology, Moral Philosophy, Experimental Physics, Elements of Zoology, Elements of Botany (comprising the medical category), Elementary Geology and Mineralogy. This is called the examination for candidates in natural sciences.

The second examination, which is for candidates in medicine, includes Elements of Comparative Anatomy, Descriptive and Regional Anatomy, Human Physiology, and Pharmacology.

The third examination, which, when successfully passed, entitles the candidate to the Doctorate, includes the following subjects, viz., General Pathology, Pathological Anatomy, Special Pathology and Therapeutics, Mental Maladies, General Therapeutics, Surgical Pathology and Ophthalmology, Theory and Practice of Midwifery (including operations), Public Hygiene, Legal Medicine, Clinical Medicine, Clinical Surgery, Surgical Operations.

The fees are—for the first examination, 80 *fr.*; second, 40 *fr.*; doctor in medicine, 240 *fr.*; total, 300 *fr.*, or about £15.

UNIVERSITY OF LOUVAIN.

THIS University, before granting the usual degree, insists upon compliance with the following conditions, viz.: 1. An examination in one group (or branch) of the sciences, Mathematics, Physico-chemics, or Natural Sciences. 2. An examination upon all medical subjects, in the French language.

Candidates for the degree of Doctor must have studied medicine five years at a recognised medical college or university, and have attended hospital practice for three years, at a recognised hospital.

The University of Louvain consists of several colleges, and the buildings of the Halles, and contains a library of 70,000 volumes.

ITALY.

GRADUATION IN MEDICINE.

THE Italian universities at which degrees in medicine are granted are Bologna, Catania, Padua, Palermo, Pavia, Pisa, Rome, Siena, and Turin. There is also a preparatory School of Medicine at Ferrara.

The regulations for Graduation in Medicine in the Universities of Italy are as follows.

1. The Medico-Chirurgical Faculty has the duty of giving instruction in all subjects relating to medicine and surgery, promoting the cultivation of all that is known in that field, and qualifying for the exercise of the medical profession in its various branches. 2. The course of medical and surgical study extends over six years, at the end of which free license to practise is granted. 3. The following courses of instruction are obligatory: General Chemistry, Organic and Inorganic; Botany; Zoology, with Comparative Anatomy and Physiology; Experimental Physics; Normal Human Anatomy (*i.e.*, Histology, Descriptive and Topographic Anatomy, and Dissection); Human Physiology; General Pathology; Pathological Anatomy (demonstrations and exercises); Materia Medica and Experimental Pharmacology; Special Medical Pathology (or Principles and Practice of Medicine); Special Surgical Pathology (Surgery); Clinical Medicine and Exercises in Semeiotics; Clinical and Operative Surgery; Theory and Practice of Ophthalmic Surgery; Theory and Practice of Diseases of the Skin and Syphilis; Midwifery and Clinical Midwifery; Forensic Medicine and Public Hygiene; Theoretical and Clinical Psychiatry (where opportunities exist). 4. The obligatory courses must each be attended one year; except Pathological Anatomy, of which two years are required, and Human Anatomy and Clinical Medicine and Surgery, each three years. 5. The following courses are non-obligatory or complementary; Medical Chemistry; Experimental Toxicology; Critical History of Medicine. 6. Besides these, other free courses may also be given. 7. There shall be three biennial examinations in the Faculty of Medicine; the first for 'promotion'; the second for 'license'; the third for the degree of 'laureate', with a diploma conferring full license to practise. 8. In the Universities of Pisa and Siena the licentiate shall have the title of laureate of the first stage (*laurea di primo grado*). 9. In order to be admitted to the first examination (*promozione*) the candidate must have been a student at the University at least two years, and have diligently attended the Courses of Chemistry, Botany, Zoology, Comparative Anatomy and Physiology, Experimental Physics, Human Anatomy, and any subjects of instruction that he may choose, so as to make up eighteen hours of instruction per week. 10. The subjects of examination shall be Chemistry, Botany, Zoology, Comparative Anatomy and Physiology, and Experimental Physics. The Examining Board shall consist of the official teachers of the subjects of examination, with one or two additional examiners not belonging to the teaching body. On the proposal of the Faculty, and with the consent of the Minister, the examination for promotion may be divided into two parts, one to be held at the end of the first year, and the other at the end of the second year. At the beginning of each scholastic year, the Faculty shall determine what courses are to be followed and when. 11. The candidate for admission to the several examinations (license) must have passed the first examination, have attended the University during two other years, and have diligently attended courses of Human Anatomy and Physiology, General Pathology, Practical Pathological Anatomy, Materia Medica and Experimental Pharmacology, Special Medical Pathology, Special Surgical Pathology, Clinical Medicine, and Clinical Surgery. 12. The Examining Board shall be composed of the official teachers of the subjects mentioned, with one or two assessors not belonging to the teaching body. The examination shall be oral, and practical as regards Human Anatomy and Materia Medica. 13. A candidate for admission to the third examination (*laurea*) must have passed the second examination, have subsequently been a student at the University during two years, and have diligently attended the

courses of Clinical Dermatology and Syphilology, Clinical Ophthalmic Surgery, Midwifery and Clinical Midwifery, Clinical Psychiatry, Exercises in Pathological Anatomy, Clinical Medicine and Surgery, Operative Surgery, Forensic Medicine and Hygiene, and voluntary courses so as to make up eighteen hours of instruction each week. 14. The candidate has to undergo an examination on the dead body and two clinical examinations. 15. The examination on the dead body shall be conducted by a sub-committee consisting of all the professors of Operative Surgery, Pathological Anatomy, and Forensic Medicine, with one or two assessors not belonging to the official teaching body. 16. In this examination, the candidate will perform on the dead body a surgical operation, the nature of which will be decided by lot from a series prepared by the sub-committee. He will also perform a necropsy, and draw up a description of the appearances seen. Finally, he will answer the questions put to him by the examiners, and especially on the results of the necropsy, which are asked by the professor of forensic medicine. 17. The first clinical examination will be conducted in the presence of a sub-committee consisting of the professors of Clinical Dermatology and Syphilology, Clinical Obstetrics, Clinical Psychiatry, Clinical Ophthalmology, and Forensic Medicine, with one or two extra-professorial assessors. 18. In this examination the candidate will examine four cases of diseases selected from the four special classes, which have not previously been examined or treated in the clinical wards, and will give his opinion on the diagnosis, prognosis, and treatment. He will afterwards answer the questions and observations of the examiners, and especially will reply to the questions put by the professor of Forensic Medicine on the obstetric and psychological cases. 19. The several clinical examinations shall be conducted in the presence of a sub-committee, consisting of the Professors of Clinical Medicine, Clinical Surgery, Medicine, Surgery, and Forensic Medicine, with one or two extra-professorial assessors. 20. The candidate shall examine, in the presence of the sub-committee, four patients, two medical and two surgical, who have not yet been examined or treated in the wards, and shall write a description of the cases. He shall, finally, answer the questions asked by the examiners. 21. A student must have passed each stage of the third examination before he can be admitted to the next stage. 22. In each examination, a student rejected in one subject alone may present himself for examination in this subject only on a future occasion; but if he be rejected in two or more subjects, the whole examination must be repeated. 23. The three stages of the third examination having been passed, the three sub-committees unite to form a committee, presided over by the President of the Faculty, and will judge of the merits of the candidates. The successful candidates will be declared doctors in medicine and surgery, and the president will refer them to the Rector, in order that they may receive the diploma of laureate.

Foreigners desirous of obtaining medical degrees in Italian Universities must produce a diploma or degree obtained at some noted foreign university, and must at the same time produce satisfactory proof that they have actually gone through all the studies and passed the examinations required for that degree. They must also pass the ordinary examinations for the medical degree, and pay the respective fees. The examinations are usually conducted in the Italian or the Latin language.

UNITED STATES OF AMERICA.

The United States possess a very large number of institutions empowered by charter to grant the degree of doctor of medicine; there being, in some instances, special colleges and schools of medicine and surgery, and in others the medical departments of Universities. The subjoined list is taken from an interesting article on Literature and Institutions, by Dr. J. S. Billings, of the United States Army, published as a part of the *Century of American Medicine*. The dates indicate the years in which degrees in medicine were first conferred by the respective bodies.

Alabama.—Medical College of Alabama (Mobile): 1860.

California.—Medical College of the Pacific University (City) College (San Francisco): 1859.—University of California (San Francisco): 1865.

Connecticut.—Medical Department of Yale College (New Haven): 1814.

District of Columbia.—National Medical College, Medical Department of Columbian University (Washington): 1826.—Georgetown University (Washington): 1852.—Howard University (Washington): 1871.

Georgia.—Medical College of Georgia (Augusta): 1833.—Savannah Medical College: 1854.—Atlantic Medical College: 1855.

Illinois.—Rush Medical College, Medical Department of University of Chicago: 1844.—Chicago Medical College, Medical Department of North-Western University: 1860.

Indiana.—Medical College of Evansville: 1850.—Indiana Medical College (Indianopolis): 1870.—Indiana College of Physicians and Surgeons (Indianopolis): 1875.

Iowa.—College of Physicians and Surgeons (Keokuk): 1850.—Iowa State University (Iowa City): 1871.

Kentucky.—University of Louisville: 1838.—Kentucky School of Medicine (Louisville): 1851.—Louisville Medical College: 1870.—Hospital College of Medicine, Medical Department of Central University (Louisville): 1875.

Louisiana.—University of Louisiana (New Orleans): 1835.—Charity Hospital Medical College of New Orleans: 1876.

Maine.—Bowdoin College and Medical School of Maine: 1821.

Maryland.—University of Maryland (Baltimore): 1811.—Washington University School of Medicine (Baltimore): 1828.—College of Physicians and Surgeons (Baltimore): 1873.

Massachusetts.—Harvard University (Boston): 1783.

Michigan.—University of Michigan (Ann Arbor): 1851.—Detroit Medical College, 1869.

Missouri.—Missouri Medical College (St. Louis): 1841.—St. Louis Medical College: 1843.—Kansas City College of Physicians and Surgeons: 1870.

New Hampshire.—Medical School of Dartmouth College (Hanover): 1798.

New York.—College of Physicians and Surgeons of the City of New York: 1769.—Albany Medical College: 1839.—University of the City of New York: 1842.—University of Buffalo: 1847.—Long Island College Hospital (Brooklyn): 1860.—Bellevue Hospital Medical College (New York): 1862.—College of Medicine of Syracuse University: 1873.

Ohio.—Medical College of Ohio (Cincinnati): 1821.—Starling Medical College (Columbus): 1836.—Cleveland Medical College: 1844.—Cincinnati College of Medicine and Surgery: 1852.—Miami Medical College (Cincinnati): 1853.—University of Wooster (Cleveland): 1865.

Oregon.—Williamette University (Salem): 1867.

Pennsylvania.—University of Pennsylvania (Philadelphia): 1768.—Jefferson Medical College (Philadelphia): 1826.

South Carolina.—Medical School of the State of South Carolina (Charleston): 1825.—University of South Carolina (Columbia): 1868.

Tennessee.—University of Nashville: 1852.—Vanderbilt University (Nashville): 1875.

Texas.—Galveston Medical College: 1866.—Texas Medical College and Hospital (Galveston): 1874.

Vermont.—University of Vermont and State Agricultural College (Burlington): 1823.

Virginia.—University of Virginia (Charlottesville): 1828.—Medical College of Virginia (Richmond): 1839.

HARVARD UNIVERSITY, BOSTON.

THE one hundredth session commences on September 28th. The following are the professors and teachers in the Medical Department:—Dr. Charles W. Eliot (President); Dr. Calvin Ellis (Clinical Medicine); Dr. Oliver W. Holmes (Anatomy); Dr. Henry J. Bigelow (Surgery—*Emeritus*); Dr. Francis Minot (Theory and Practice of Physic); Dr. John P. Reynolds (Obstetrics); Dr. Henry W. Williams (Ophthalmology); Dr. David W. Cheever (Clinical Surgery); Dr. James C. White (Dermatology); Dr. Robert T. Edes (Materia Medica); Dr. Henry P. Bowditch (Physiology); Dr. Charles F. Folsom (Assistant, Mental Diseases); Dr. Frederick I. Knight (Assistant, Laryngology); Dr. Charles B. Porter (Assistant, Surgery); Dr. J. Collins Warren (Assistant, Surgery); Dr. Reginald H. Fitz (Pathological Anatomy); Dr. William L. Richardson (Assistant, Obstetrics); Dr. Thomas Dwight (Instructor in Topographic Anatomy and Histology); Dr. Edward S. Wood (Chemistry); Dr. William H. Baker (Assistant, Gynæcology). Other instructors are:—Dr. William B. Hills (Instructor in Chemistry); Dr. F. W. Draper (Lecturer on Forensic Medicine); Dr. H. P. Quincy (Assistant in Histology); Dr. E. N. Whittier (Instructor in the Theory and Practice of Physic); Dr. F. A. Harris (Demonstrator of Medico-Legal Examinations); Dr. W. P. Bolles (Instructor in Materia Medica); Dr. E. H. Bradford (Assistant in Clinical Surgery); Dr. W. S. Bigelow (Assistant in Surgery); Dr. F. H. Davenport (Assistant in Gynæcology); Dr. G. M. Garland (Assistant in Clinical Medicine); Dr. J. W. Warren (Assistant in Physiology); Dr. M. H. Richardson (Demonstrator of Anatomy); Dr. W. W. Gannett (Assistant in Pathological Anatomy); Dr. C. S. Minot (Lecturer on Embryology); Dr. W. C. Emerson (Assistant in Chemistry); Dr. W. J. Otis (Assistant in Anatomy); Dr. Samuel J. Mixter, (Assistant in Anatomy). The following gentlemen will give special clinical instruction:—Dr. John Homans (Diagnosis and Treatment of Ovarian Tumours); Dr. Francis B. Greenough (Syphilis); Dr. Oliver F. Wadsworth (Ophthalmoscopy); Dr. J. Orne Green and Dr. Clarence J. Blake (Otology); Dr. Amos L. Mason and Dr. Frederick C. Shattuck (in Auscultation); Dr. J. P. Oliver and Dr. T. M. Rotch (Diseases of Children); Dr. S. G. Webber and Dr. J. J. Putnam (Diseases of the Nervous System); Dr. James R. Chadwick (Gynæcology).

All candidates for admission who hold no degree in arts or science, must pass a written examination on entrance to this School, in English, Latin, Physics, and in any one of the following subjects: French, German, Elements of Algebra or of Plain Geometry, Botany.

Instruction is given by lectures, recitations, clinical teaching, and practical exercises, distributed throughout the academic year. The year is divided into two equal terms.

The course of study recommended by the Faculty covers four years, but until further notice the degree of Doctor of Medicine will continue to be given upon the completion of three years of study, to be as ample and full as heretofore. The degree of Doctor of Medicine *cum laude* will be given to candidates who have pursued a complete four years' course, and obtained an average of 75 per cent. upon all the examinations of this course. In addition to the ordinary degree of Doctor of Medicine as heretofore obtained, a certificate of attendance on the studies of the fourth year will be given to such students desiring it as shall have attended the course, and have passed a satisfactory examination in the studies of the same.

The order of studies and examinations for the four years' course is as follows: *First Year.*—Anatomy, Physiology, and General Chemistry. *Second Year.*—Practical and Topographical Anatomy, Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, Surgery, and Clinical Surgery. *Third Year.*—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery. *Fourth Year.*—Ophthalmology, Otology, Dermatology, Syphilis, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Obstetrics, Clinical and Operative Obstetrics, Clinical Medicine, Clinical and Operative Surgery, Hygiene, Forensic Medicine. Students are divided into four classes, according to their time of study and proficiency, and during their last year will receive largely increased opportunities of instruction in the special branches mentioned. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission. The examinations are held in the following order: End of first year—Anatomy, Physiology, and General Chemistry. End of second year—Topographical Anatomy, Medical Chemistry, Materia Medica, and Pathological Anatomy. End of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Surgery. End of fourth year—Ophthalmology, Otology, Dermatology, Syphilis, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Obstetrics, Clinical and Operative Obstetrics, Clinical Medicine, Clinical and Operative Surgery, Hygiene, Forensic Medicine.

The order for the three years' course is as follows: *First Year.*—Anatomy, Physiology, and General Chemistry. *Second Year.*—Practical and Topographical Anatomy, Medical Chemistry, Material Medica, Pathological Anatomy, Clinical Medicine, and Clinical Surgery. *Third Year.*—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, Clinical Surgery, Ophthalmology, Derma-

tology, Syphilis, Otology, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Hygiene, Forensic Medicine. Students following this course are classified as heretofore, and the instruction in the special branches is of the same character as that which has been given for several years. The examinations of the first two years are common to both groups of students. The final examinations at the close of the third year are in the following subjects: Therapeutics, Obstetrics, Surgery and Clinical Surgery, Theory and Practice, Clinical Medicine.

Examinations in all subjects are also held before the opening of the School, beginning September 27.

Every candidate for a degree must be twenty-one years of age; must have studied medicine three or four full years, have spent at least one continuous year at this School, have passed a written examination upon all the prescribed studies of the course taken, and have presented a thesis.

Course for Graduates.—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory, and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises, in addition to the list of special departments above stated, the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy. On payment of the full fee the privilege of attending any of the other exercises of the Medical School, the use of the laboratories and library, and all other rights accorded by the University will be granted. Single branches may also be pursued. Graduates of other Medical Schools who may desire to obtain the degree of M.D. at this University will be admitted to examination for this degree after a year's study in the Graduates' Course. Examination on entrance is not required.

Fees.—The fees are: for Matriculation, 5 dollars; for the year, 200 dollars; for one term alone, 120 dollars; for Graduation, 30 dollars. For Graduates' course the fee for one year is 200 dollars; for one term, 120 dollars; and, for single courses, special fees. Payment is made in advance.

Members of any one department of Harvard University have a right to attend lectures and recitations in any other department without paying additional fees.

UNIVERSITY OF PENNSYLVANIA.

THE Medical Department of this University is the oldest medical school in America, having been established in 1765 by Drs. John Morgan and William Shippen, on the plan of the University of Edinburgh, of which the founders were graduates. The following are the professors of the faculty as at present constituted:—Dr. W. Pepper, Provost of the University and *ex officio* President of the Faculty; Dr. H. H. Smith (Surgery—*Emeritus*); Dr. Joseph Leidy (Anatomy); Dr. Richard A. F. Penrose (Obstetrics and Diseases of Women and Children); Dr. Alfred Stillé (Theory and Practice of Medicine, and Clinical Medicine); Dr. D. Hayes Agnew and Dr. John Rhea Barton (Surgery and Clinical Surgery); Dr. William Pepper (Clinical Medicine); Dr. William Goodell (Clinical Gynæcology); Dr. James Tyson (General Pathology and Morbid Anatomy); Dr. Horatio C. Wood (Materia Medica, Pharmacy, and General Therapeutics); Dr. Theodore G. Wormley (Chemistry); Dr. John Ashhurst, jun. (Clinical Surgery); Dr. Harrison Allen (Physiology); also the following clinical professors of special subjects:—Dr. W. F. Norris (Diseases of the Eye); Dr. G. Strawbridge (Diseases of the Ear); Dr. H. C. Wood, (Nervous Diseases); Dr. L. A. Duhring (Diseases of the Skin).

The curriculum is arranged as follows:—*First Year:* Anatomy, Histology, Materia Medica and Pharmacy, General Chemistry, Physiology, General Pathology, General Clinics—Medical and Surgical. Final Examinations in General Chemistry, Materia Medica, and Pharmacy. *Second Year:* Anatomy, Topographical Anatomy, Medical Chemistry, Physiology, General Pathology and Morbid Anatomy, Therapeutics, Theory and Practice of Medicine, Surgery, Obstetrics, General Clinics—Medical and Surgical. Final examinations in Anatomy, Medical Chemistry, and Physiology. *Third Year:* General Pathology and Morbid Anatomy, Topographical Anatomy, Therapeutics, Theory and Practice of Medicine, Surgery, Obstetrics, Operative Surgery, Minor Surgery and Bandaging, Diseases of Women and Children; Gynæcology, Bedside Instruction in Practical Medicine (including Physical Diagnosis), Bedside Instruction in Practical Surgery, Practical Ophthalmology, Practical Otology, Practical Dermatology, Practical Electro-Therapeutics, General Clinics—Medical and Surgical. Special Clinics (Nervous Diseases, Diseases of Skin, Eye, Ear, Diseases of Women and Children). Final examinations for degree at the end of the course. Genera Pathology and Morbid Anatomy, Therapeutics, Theory and Practice of Medicine, Surgery, Obstetrics, and Diseases of Women and Children. Opportunities for practical work in the physiologica laboratory will be afforded to those who desire them. A separate fee is charged.

No beneficiary students are received, nor students at reduced rates, except in the case of the six successful applicants for the scholarships created by the board of trustees. These are open to competitive examination. Candidates must furnish satisfactory evidence that they are without the means to defray the expenses of a medical education. They must also write a brief autobiography, which will serve as a test of their qualifications in orthography and grammar; and pass an examination in a Latin prose translation (first three books of Cæsar), and an examination in elementary physics. This examination is held annually in September.

The Faculty have established a post-graduate course, which embraces various special departments. The post-graduate instruction, for the year 1882-3, will be divided into three terms of two months each; 1. From Oct. 23rd to Dec. 23rd; 2. From Jan. 2nd to March 1st; 3. From April 9th to June 9th. It includes a course of didactic lectures on Dermatology, Ophthalmology and Otology, extending over the four months occupied by the two winter courses, that is, from Oct. 23rd to March 1st. The following subjects are taught practically and in limited classes at the hospitals and dispensaries to which the instructors are attached:—Clinical Medicine and Physical Diagnosis, by Professor Pepper and Dr. Bruen; Renal Diseases, with Practical Examination of Urine, by Professor Tyson; Nervous Diseases and Electro-Therapeutics, by Professor Wood; Clinical Surgery, by Professor Ashhurst and Dr. Wharton; Ophthalmology, by Professor Norris and Dr. Risley; Dermatology, by Professor Duhring; Otology, by Professor Strawbridge; Gynæcology, by Dr. Baer; Operative Surgery, by Dr. White; Syphilis, by Dr. White; Clinical and Operative Obstetrics, by Dr.

Richardson; Laryngology, by Dr. Seiler; Diseases of Children, by Dr. Starr and Dr. Keating.

The Laboratory Building is a spacious building of four floors: the first being devoted to operative dentistry; the second and third are fitted up as chemical laboratories; while the fourth contains apartments for physiological, histological, and pathological investigation. There are also a pharmaceutical laboratory, and one of experimental therapeutics. The attendance of the students upon the laboratory courses is compulsory. Before commencing dissecting, the student is obliged to attend the osteo-syndesmological laboratory, in order to make himself familiar with the skeleton. The following are the requirements for graduation.

Students who have attended one course in a regular medical school (homœopathic and eclectic schools are not recognised) will be admitted as students of the second course in the University, after having satisfactorily passed an examination in general chemistry and materia medica and pharmacy. Students who have attended two courses in a regular medical school will be admitted as students of the third course, after having satisfactorily passed an examination in general and medical chemistry, materia medica and pharmacy, anatomy, and physiology. Graduates of other regular medical schools in good standing will be admitted as students of the third course without an examination. Graduates of colleges of pharmacy and dental colleges in good standing are admitted to the second course without an examination.

The candidate for the degree of doctor of medicine must have attained the age of twenty-one years, and be of good moral character. He must have studied medicine for three years, and have attended at least his last course of instruction in this school; have prepared a satisfactory thesis, and have passed the required examinations. Candidates who have not been successful upon a first examination will be permitted to have a second before the June commencement. The commencement for conferring the degree of doctor of medicine is held on the 15th day of March, unless that day should fall on a Saturday or Sunday, when it is held on the preceding Friday. The degree will not be conferred upon a candidate who absents himself from the public commencement, except by special permission of the medical faculty.

The entire college expenses for the three years' course is 435 dollars, including matriculation and graduating fees.

JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

THE fifty-eighth Session of this College will begin on October 2nd, and continue till the end of March 1883. The lectures will be delivered by the following professors: Dr. Samuel D. Gross (Institutes and Practice of Surgery);—*Emeritus;* Dr. Ellerslie Wallace (Obstetrics and Diseases of Women and Children); Dr. Roberts Bartholow (Materia Medica and General Therapeutics; Dr. Henry C. Chapman (Institutes of Medicine and Medical Jurisprudence); Dr. J. M. Da Costa (Practice of Medicine); Dr. W. H. Pancoast (General Descriptive, and Surgical Anatomy); Dr. Robert E. Rogers (Medical Chemistry and Toxicology); Dr. S. W. Gross (Principles of Surgery and Clinical Surgery); Dr. J. H. Brinton (Practice of Surgery and Clinical Surgery); Dr. W. Thompson (Ophthalmology).

A spring course of Supplementary Lectures is given, beginning early in April and ending early in June. There is no additional charge for this course to matriculates of the College, except a registration fee of 5 dollars; non-matriculates pay 40 dollars, 35 of which is, however, credited on the amount of fees paid for the ensuing Winter Course.

The recent enlargement of the College has enabled the Faculty to perfect the system of Practical Laboratory Instruction, in all the Departments. Rooms are assigned in which each Professor, with his Demonstrators, instructs the Class, in Sections, in direct observation and hand-work in the Chemical, Pharmaceutical, Physiological, and Pathological Laboratories. Operative and Minor Surgery, and investigation of Gynæcological and Obstetric conditions on the Cadaver, are taught, as also Diagnosis of Disease on the living subject. This course of Instruction is free of charge, but obligatory upon candidates for the Degree, except those who are Graduates of other Colleges of ten years' standing.

Clinical Instruction is given throughout the year at the Hospital of Jefferson College, which accommodates 100 patients.

A candidate for the degree of M.D. must be of good moral character, and at least 21 years of age. He must have studied medicine for not less than three years, and have attended at least two full winter sessions of lectures, one of which must have been in this College. At least one course of Practical Anatomy and one of Clinical Instruction must have been attended; and he must present a thesis, of his own composition and in his own handwriting, on some medical subject.

No honorary degrees in medicine are granted by this College.

The *Fees* are: for a full Course, 140 dollars; Matriculation Fee (paid once only), 5 dollars; Practical Anatomy, 10 dollars; Graduation Fee, 30 dollars; for a full course of Lectures to those who have attended two full courses at other recognised Colleges, the Matriculation Fee and 70 dollars; to Graduates of other Colleges, of less than ten years, the Matriculation Fee and 50 dollars; to Graduates of ten years and upwards, the Matriculation Fee only.

COLLEGE OF PHYSICIANS AND SURGEONS OF NEW YORK.

THIS is otherwise known as the Medical Faculty of Columbia College. The instruction is given by the following professors, etc.: Dr. Alonzo Clark (Pathology and Practical Medicine); Dr. Willard Parker (Principles and Practice of Surgery)—*Emeritus;* Dr. J. C. Dalton (Physiology and Hygiene); Dr. T. M. Markoe (Principles of Surgery); Dr. T. Gaillard Thomas (Clinical Gynæcology); Dr. J. T. Metcalfe (Clinical Medicine)—*Emeritus;* Dr. H. B. Sands (Practice of Surgery); Dr. J. W. McLane (Obstetrics and the Diseases of Children); Mr. T. T. Sabine (Anatomy); Dr. C. F. Chandler (Chemistry and Medical Jurisprudence); Dr. E. Curtis (Materia Medica and Therapeutics); Dr. F. Delafield (Adjunct, Pathology and Practical Medicine); Dr. J. G. Curtis (Adjunct, Physiology and Hygiene); Dr. Wm. Detmold (Military and Clinical Surgery)—*Emeritus;* Dr. W. H. Draper (Clinical Medicine); Dr. Cornelius R. Agnew (Diseases of the Eye and Ear); Dr. Abraham Jacobi (Clinical, Diseases of Children); Dr. Fessenden N. Otis (Clinical, Venereal Diseases); Dr. Edward C. Seguin (Clinical, Diseases of the Mind and Nervous System); Dr. G. M. Lefferts

(Clinical, Laryngoscopy and Diseases of the Throat); Dr. G. H. Fox (Clinical, Diseases of the Skin); Dr. Bull (Demonstrator of Anatomy); Dr. Prudden (Director of the Pathological Laboratory).

The Collegiate Year consists of a regular Winter Session, attendance upon which is required for the graduation. The Session for 1882-83 begins October 2nd, and continues till May. Tuition is by the following methods:

1. *Didactic Lectures.*—During the Session from two to six lectures are given daily by the Faculty. Attendance is obligatory.

2. *Clinical Teaching.*—Ten clinics, covering all departments of medicine and surgery, are held weekly throughout the entire year in the College Building. In addition, the Faculty give daily clinics at the larger City Hospitals and Dispensaries (such as the Bellevue Charity, New York, and Roosevelt Hospitals, the New York Eye and Ear Infirmary, the Women's Hospital, etc.) Attendance is optional.

3. *Recitations* are held daily. Attendance is optional.

Personal Instruction. — Personal instruction is given in Practical Anatomy, Experimental Physiology, Operative Surgery, Minor Surgery, Physical Diagnosis, Ophthalmology, Otology, Laryngoscopy, Normal and Pathological Histology, and the Examination of the urine. Attendance is optional, except upon Practical Anatomy.

Candidates for the Degree of Doctor of Medicine must have attended two full courses of lectures on Anatomy, Physiology, Chemistry, Materia Medica and Therapeutics, Obstetrics, Surgery, Pathology, and Practical Medicine; the second course must have been given in this College. Students are permitted—and are recommended—to complete the two full courses by attendance during three or more sessions, taking only certain branches in each session. Candidates must have studied Practical Anatomy during one winter session; have been engaged during three years in the study of medicine under a regular physician or surgeon; have attained the age of 21 years; and be of good moral character. Each candidate must present a thesis on some medical subject, and pass an examination in the seven branches of medical science above mentioned.

Students who have attended two courses of lectures (one being at this College) on Anatomy, Physiology, and Chemistry, may be examined on these subjects at the end of their second course; and the examination, if satisfactory, is accounted final.

Students and graduates of other schools are admitted under special regulations.

The fees are: Yearly matriculation, 5 dollars; Course of Lectures each Session, 140 dollars, or 20 dollars for each course; Practical Anatomy, 10 dollars, and graduation fee, 30 dollars.

UNIVERSITY OF THE CITY OF NEW YORK.

THE Professors in the Faculty of Medicine are: Dr. Alfred C. Post (Clinical Surgery)—*Emeritus;* Dr. Charles I. Pardee (Diseases of the Ear); Dr. John C. Draper (Chemistry); Dr. Alfred L. Loomis (Pathology and Practice of Medicine); Dr. W. Darling (Anatomy); Dr. W. H. Thomson (Materia Medica, Therapeutics, and Diseases of the Nervous System); Dr. J. W. S. Arnold (Physiology and Histology); Dr. J. Williston Wright (Surgery); Dr. Fanueil D. Weisse (Practical and Surgical Anatomy); Dr. W. H. Polk (Obstetrics and Diseases of Women and Children; Dr. L. A. Stimson (Pathological Anatomy); Dr. R. Witthaus (Physiological Chemistry); Dr. Stephen Smith (Clinical Surgery); Dr. A. E. Macdonald (Medical Jurisprudence and Diseases of the Mind); Dr. H. Knapp (Ophthalmology); Dr. A. L. Ranney (Adjunct Professor of Anatomy).

The Collegiate Year is divided into three Sessions: a Preliminary Session, a Regular Winter Session, and a Spring Session.

The Preliminary Session will begin on Wednesday, September 20th, and end October 4th. It will be conducted on the same plan as the Regular Winter Session.

The Regular Winter Session will begin October 4th, 1882, and end about the middle of March 1883. The Plan of Instruction consists of Didactic and Clinical Lectures, recitations and laboratory work in all subjects in which it is practicable. To put the laboratories on a proper footing a new building has been erected at an expense of 30,000 dollars. It will contain laboratories fitted for instruction in Chemistry, Histology, Pathology, Materia Medica, Operative Surgery, and Gynæcology.

Two to five Didactic Lectures, and two or more Clinical Lectures, will be given each day by members of the Faculty. In addition to the ordinary clinics, special clinical instruction, without additional expense, will be given to the candidates for graduation during the latter part of the Regular Session. For this purpose the candidates will be divided into sections of twenty-five members each. All who desire to avail themselves of this valuable privilege must give in their names, and pay their examination fee of 30 dollars to the Dean, during the first week in November. At these special clinics students will have excellent opportunities to make and verify diagnoses, and watch the effects of treatment. They will be held in the Wards of the Hospitals and at the Public and College Dispensaries.

Evening Recitations are conducted by the Professors of Chemistry, Practice, Anatomy, Materia Medica, Physiology, Surgery, and Obstetrics, upon the subjects of their lectures. Students are thus enabled to make up for lost lectures and prepare themselves properly for their final examinations without additional expense.

The Spring Session will begin about the middle of March and end the last week in May. The daily Clinics and Special Practical Courses will be the same as in the Winter Session, and there will be Lectures on Special Subjects by the Members of the Faculty. It is supplementary to the Regular Winter Session. Nine months of continued instruction are thus secured to all students of the University who desire a thorough course.

Fees.—These are: for Course of Lectures, 140 dollars; Matriculation, 5 dollars; Demonstrator's Fee (including material for dissection), 10 dollars; final Examination Fee, 30 dollars.

BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

THE teaching staff of the College consists of the following professors: Dr. Isaac E. Taylor (Obstetrics and Diseases of Women)—*Emeritus;* Dr. Fordyce Barker (Clinical Midwifery and Diseases of Women); Dr. B. W. McCready (Materia Medica and Therapeutics and Clinical Medicine)—*Emeritus;* Dr. Austin Flint (Principles and Practice of Medicine, and Clinical Medicine; Dr. W. H. Van Buren (Principles and Practice of Surgery and Clinical Sur-

gery); Dr. Lewis A. Sayre (Orthopædic Surgery and Clinical Surgery); Dr. Alexander B. Mott (Clinical and Operative Surgery); Dr. Wm. T. Lusk (Obstetrics and Diseases of Women and Children, and Clinical Midwifery); Dr. A. A. Smith (Materia Medica and Therapeutics, and Clinical Medicine); Dr. Austin Flint, jun. (Physiology and Physiological Anatomy); Dr. Joseph D. Bryant (General, Descriptive, and Surgical Anatomy); Dr. R. Ogden Doremus (Chemistry and Toxicology); Dr. Edward G. Janeway, Diseases of the Nervous System and Clinical Medicine, and Associate Professor of Medicine); Dr. Henry D. Noyes (Ophthalmology and Otology); Dr. John P. Gray (Psychological Medicine and Medical Jurisprudence); Dr. J. W. Howe (Clinical Surgery); Dr. Edward L. Keyes, Cutaneous and Genito-Urinary Diseases); Dr. J. L. Smith (Diseases of Children); Dr. F. S. Dennis (Adjunct, of Principles and Practice of Surgery); Dr. W. H. Welsh (Pathological Anatomy and General Pathology); Dr. C. A. Doremus (Adjunct to Chair of Chemistry and Toxicology); also the following lecturers: Dr. L. M. Yale (Adjunct, upon Orthopædic Surgery); Dr. Beverley Robinson (Clinical Medicine); Dr. F. H. Bosworth (Diseases of the Throat); Dr. F. A. Castle (Pharmacology); Dr. W. H. Welch (Pathological Histology); Dr. T. H. Burchard (Surgical Emergencies); Dr. C. S. Bull (Ophthalmology and Otology).

The Collegiate Year in this Institution embraces the Regular Winter Session, and a Spring Session. The Regular Session begins on Wednesday, September 20, 1882, and ends about the middle of March 1883. During this Session, in addition to four didactic lectures on every week day except Saturday, wo or three hours are daily allotted to clinical instruction. Attendance upon two regular courses of ectures is required for graduation. The Spring Session consists chiefly of recitations from text-books. This Session begins about the middle of March, and continues until the middle of June. During this Session, daily recitations in all the departments are held by a corps of examiners appointed by the Faculty. Short courses of lectures are given on special subjects, and regular clinics are held in the Hospital and in the College building.

Fees.—For the Regular Session: Tickets to all the Lectures, Clinical and Didactic, 140 dollars; for Students who have attended two full courses at other Medical Colleges,; and for Graduates of less than three years' standing of other Medical Colleges, 70 dollars; Matriculation fee, 5 dollars; Dissection fee (including material for dissection), 10 dollars; Graduation fee, 30 dollars; no fees for Lectures are required of Graduates of three years' standing, or of third-course Students who have attended their second course at the Bellevue Hospital Medical College. For the Spring Session: Matriculation (ticket valid for the following winter), 5 dollars; Recitations, Clinics, and Lectures, 40 dollars; Dissection (ticket valid for the following winter), 10 dollars.

The Matriculation Examination consists of English composition; Grammar, an examination upon the above-mentioned composition; Arithmetic, including vulgar and decimal fractions; Algebra, including simple equations; Geometry, first two books of Euclid. This examination will be waived for those who have received the degree of A.B., those who have passed the freshman examination for entrance into any incorporated literary college, those who present certificates of proficiency in the subjects of the matriculation examination from the principal or teachers of any reputable high school, and those who have passed a matriculation examination at any recognised medical college or at any scientific school or academy in which an examination is required for admission.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

The Johns Hopkins University provides a special collegiate course for those who intend afterwards to study medicine. This course extends throughout three years, and the A.B. degree is conferred on matriculated students who complete it. The main object held in view is to utilise for intending medical students the opportunities for practical study in physics, chemistry, and biology, found in an endowed institution with well-equipped laboratories, and often wanting in medical schools; it is also considered an object to lessen the work at a medical school by giving the student a good knowledge of the sciences which lie at the basis of the medical art before he commences professional study. Physics, chemistry, and biology are therefore the main subjects included in the course; some knowledge of French and German is also demanded; and there are, in addition, several subjects between which an option is allowed. These are Latin, Greek, mathematics, English literature, history, logic, and psychology. Each student must take up at least two of these optional subjects, the amount of knowledge required in each being such as would be obtained by a year's honest work.

The scientific subjects are taken up in the following order.

I. *Physics*—There will be three recitations, two lectures, and one exercise in the physical laboratory weekly through a year. Elementary mechanics will be studied during the first portion of the year; then will follow the study of the physical properties of matter, theory of undulations, acoustics, heat, magnetism, electricity, and light.

II. *Chemistry*—The course of lectures and recitations on general chemistry is in progress through the year. Students of this course are expected to attend all these exercises during the first year, and during the last half of the first year and the first half of the second year to work daily in the chemical laboratory.

III. *Biology*—The study of biology will begin in the second year, after the student has made considerable progress in the study of physics and chemistry, and will continue through the third year. Those who have acquired elsewhere sufficient knowledge of the above subjects to satisfy the examiners may be at once admitted to work in the biological laboratory.

The course of study is as follows. 1. *General Biology*—Lectures, recitations, or examinations four times weekly throughout one year, with daily laboratory instruction. In this course, beginners are taught how to use the microscope and to dissect. 2. *Human and Comparative Osteology*—About sixty lectures or recitations. 3. *Human Anatomy.*—This course extends from the commencement of the closing academic year to the end of March, and consists chiefly of demonstrations and practical study in the dissecting-room. 4. *Animal Physiology and Histology.*—Three lectures or examinations weekly throughout the academic year. The microscopic structure of the tissues and organs is studied,

except so much as may have already been gone through in the course of general biology. Students are required to perform for themselves the simpler physiological experiments. 5. From time to time short advanced courses of lectures on special physiological topics are delivered.

Instruction is also provided in mathematics, ancient and modern languages, history, psychology, English philology and literature, comparative anatomy, botany.

Graduates from approved institutions, having already obtained a liberal education, concentrate their attention on the scientific courses, and so complete the curriculum preliminary to medical studies in less than three years. On the other hand, a student may spend a longer time in these preparatory studies, or take up additional ones. Medical men or others properly fitted to profit by such opportunities are received for advanced study or investigation in chemistry, histology, or physiology, as well as other subjects.

CANADA.

THE following are the Medical Examining Bodies and Schools in the several provinces constituting the Dominion of Canada.

NOVA SCOTIA.—University of Halifax Faculty of Medicine; Halifax Medical College.

ONTARIO.—College of Physicians and Surgeons of Ontario; Medical Faculty of the University of Victoria College, Coburg; Medical Faculty of Queen's College, Kingston; Royal College of Physicians and Surgeons, Kingston; Medical Faculty of the University of Ottawa; Toronto University Faculty of Medicine; Trinity College Faculty of Medicine, Toronto; Toronto School of Medicine; Trinity Medical College.

QUEBEC.—College of Physicians and Surgeons of Quebec; Bishop's College University Faculty of Medicine, Montreal; Laval University, Montreal and Quebec; McGill University Faculty of Medicine.

TORONTO UNIVERSITY FACULTY OF MEDICINE.

THE Degree of Bachelor of Medicine may be obtained, either (1) by taking a Pass Course, or (2) by taking an Honour Course.

Candidates, to enter this faculty, must pass the Matriculation Examination unless (1) they possess a Degree in Arts, not being an Honorary Degree, from any Dominion or British University, or (2) they have already matriculated in the Faculty of Arts, or in the Faculty of Law in this University. Before presenting themselves for the Matriculation Examination, candidates must produce satisfactory certificates of good conduct, and of having completed the sixteenth year of their age. The Matriculation Examination (both Pass and Honours) commences in the latter part of June, and Supplemental Examinations (Pass alone) are held in the latter part of September. Candidates on giving notice of intention to present themselves at the Matriculation Examination must signify whether they propose taking the Pass or the Honour Examination. Scholarships are only awarded in connection with the latter. The following groups of subjects must be passed by every Matriculant: 1. Three out of four languages, Latin, Greek, French, and German, one of which must be Latin; 2. Mathematics, including Arithmetic, Algebra to the end of Quadratics, and the first three books of Euclid; 3. English Grammar and Composition, with the Outlines of History and of modern Geography, and an exercise in Writing to Dictation. Extra Honour papers are set in all the above-mentioned subjects, and special attention is paid to translation from English into other languages. A paper on Chemistry is set for such honour students as may enter for the same. Those candidates are placed in the first class of honours who obtain two-thirds or more of the aggregate number of marks; those who obtain one-half of the aggregate number in the second class. Two Matriculation Scholarships are awarded to the two highest candidates, provided that they have obtained at least sixty per cent. of the aggregate number of marks, exclusive of those allotted Chemistry. Undergraduates must attend lectures and receive practical instruction, during four years, at a recognised School of Medicine. Each Undergraduate, at the end of each of the four years, must present himself at the Annual Examination. These examinations are styled the first, second, third, and fourth Professional Examinations, and are to be passed by all candidates for the Degree. If a candidate be prevented by sickness, or other unavoidable cause, from attending at one of the Professional Examinations, he may take that examination together with the next following. If a candidate be rejected in one subject only, having shown fair proficiency in the others, he may take that subject along with the work of the next Professional Examination. If a candidate for the First Professional Examination fail to pass in two subjects, the Board of Examiners may recommend that the subjects passed be allowed, and that he shall take the others with the Second Professional Examination. Graduates in Arts of this University, with honours in department of Natural Sciences, are exempted from the First Professional Examination, and from the fee for the same. They must, however, take Anatomy along with the Second Professional Examination. No candidate can pass a Professional Examination who has not obtained at least one-half of the marks required; nor is a candidate considered as having passed any subject who has not obtained at least one-third of the marks allotted to it. Every undergraduate who proposes to present himself at a Professional Examination must send in to the Registrar a statement (according to a printed form furnished) of the course he is taking, whether Pass or Honour, of the lectures attended, and of the practical instruction received, with the names of the Teachers, and such other particulars as the printed form may indicate, together with the original certificates referred to in the statement.

The following are the certificates required for the different examinations, and the subjects of examination.

First Professional Examination.—Certificates are required: 1. Of Matriculation; 2. Of having attended a course of lectures on each of the following subjects: Anatomy, at least 100 lectures; Inorganic Chemistry, at least 60 lectures; Natural Philosophy, at least 20 lectures; *Botany, at least 40 lectures; *Zoology at least 40 lectures. Of the above lectures marked *, at least one-third must be of the nature of practical lessons, involving laboratory practice; 3. Of practical instruction in Anatomy during six months. The subjects of examination are: 1. Anatomy

of the Bones, Muscles, and Ligaments, and of the Viscera of the Abdomen and Thorax; 2. Elements of Inorganic Chemistry; 3. Elements of Natural Philosophy, Electricity, Heat, and Light; 4. Elements of Botany, including the characters and properties of the following Natural Orders; Ranunculaceæ, Papaveraceæ, Cruciferæ, Caryophyllaceæ, Malvaceæ, Leguminosæ, Rosaceæ, Saxifragaceæ, Onagraceæ, Umbelliferæ, Rubiaceæ, Compositæ, Ericaceæ, Primulaceæ, Scrophulariaceæ, Labiatæ, Solanaceæ, Polyglonaceæ, Euphorbiaceæ, Urticaceæ, Amentaceæ, Orchidaceæ, Liliaceæ, Palmæ, Cyperaceæ, Gramineæ. An acquaintance with the noxious and medicinal plants of the Canadian Flora is expected: 5. Elements of Zoology; and, for candidates for honours, Comparative Anatomy of Vertebrata, and Practical Examination in Natural Philosophy.

Second Professional Examination.—Candidates must produce certificates: 1. Of having attended lectures on Anatomy (second course of 100 lectures); Physiology, Materia Medica and Therapeutics, each at least 100 lectures; Organic Chemistry, at least 40 lectures; 2. Of Practical Instruction in Anatomy (a second course of six months; Histology; and Physiological Chemistry, each during at least three months; 3. Of having dissected the human body once; 4. Of being skilled in Compounding and Dispensing Drugs. (This certificate may be from a registered practitioner, the apothecary of a public hospital, or of a public dispensary, or from a member of the Pharmaceutical Societies of Ontario or Quebec.) The subjects of examination are: 1. Elements of Organic Chemistry; 2. Anatomy; 3. Physiology; 4. Materia Medica and Therapeutics; and (for honours) Physiology of Muscle, Nerve, Circulation, etc.

Third Professional Examination.—The candidates must produce evidence: 1. Of having attended lectures on Practice of Medicine, Surgery, Obstetrics, etc.; Clinical Surgery and Medicine, during courses of 100 lectures each; General Pathology, at least 50 lectures; 2. Of having dissected the human body a second time; 3. Of Practical Instruction in Pathological Histology during at least three months. The subjects of this examination are: 1. Practice of Medicine; 2. Surgery and Surgical Anatomy; 3. General Pathology, including Morbid Anatomy and the mode of conducting Necropsies; 4. Obstetrics and Diseases of Women and Children; 5. Clinical Medicine and Surgery.

Fourth Professional Examination.—Certificates are required: 1. Of having attended lectures on:—Clinical Medicine and Surgery, a further course of 100 lectures; Forensic Medicine, 50 lectures; Hygiene, 25 lectures; Medical Psychology, 12 lectures; 2. Of Practical Instruction in Chemistry in its application to Hygiene and Forensic Medicine; 3. Of having attended at least six clinics in a Public Lunatic Asylum; 4. Of having conducted at least six Labours; 5. Of proficiency in Vaccination (certificate received from any registered Practitioner); 6. Of attendance in the wards of a Public Hospital accommodating not less than 100 beds during eighteen months; 7. Of attendance for six months on the out practice of a Hospital, Dispensary, or registered Practitioner; 8. Of having attended twelve Necropsies. The subjects of examination are: 1. Practice of Medicine; 2. Surgery; 3. Forensic Medicine; 4. Hygiene; 5. Medical Psychology; 6. Clinical Medicine and Surgery; 7. Practical Chemistry in its application to Forensic Medicine and Hygiene.

In all the Professional Examinations special importance is attached to the practical part.

Candidates for Honours are entitled to First Class Honours in any of the Professional Examinations if they obtain 75 per cent. of the aggregate marks; those who obtain 66 per cent. will be entitled to Second Class Honours. Extra papers on all the Pass Subjects will be set for Honour candidates, as well as papers on certain subjects, as indicated above. Candidates proceeding to the Degree of M.B. by taking the Honour Course are grouped in two classes. Those receive the Degree with First Class Honours who have been placed in the Honour List in all of the four Professional Examinations, and have obtained First Class Honours in at least three out of the four. Those receive their Degree with Second Class Honours who have been placed in the Honour List in three out of the four Professional Examinations, and have obtained First Class Honours in at least one examination. Candidates for the Degree of M.B. who are also Graduates in Arts of the University with Honours in the Department of Natural Science, are considered as having passed their first Professional Examination with First Class Honours.

Degree of M.D.—Candidates for the Degree of M.D. must be of one year's standing from admission to the Degree of M.B., and have composed an approved thesis upon some medical subject.

Fees.—The fees are: Matriculation, 5 dollars; Registration of exemption from this examination for Graduates in Arts from other Universities, 5 dollars; for Matriculants from other Faculties in the University, 3 dollars; for Graduates in Arts of this University, 2 dollars. No fee is exacted from Graduates in Arts of this University who have taken honours in Natural Science. For each Professional Examination, 2 dollars; a rejected candidate may present himself at the same examination in the following year on payment of 1 dollar. Degree of M.B., 6 dollars; Degree of M.D., 8 dollars; admission *ad eundem gradum*, 10 dollars.

TRINITY COLLEGE UNIVERSITY FACULTY OF MEDICINE.

THE following are the requisites for admission to the Degree of Bachelor of Medicine in this University. The candidate must have passed a Matriculation Examination in the following subjects, or one equivalent thereto, in this or in some other recognised institution. The subjects comprised are: English Language (including Grammar and Composition); Arithmetic; Algebra (including Simple Equations); Geometry (first two Books of Euclid); Latin (Translation and Grammar); and one of the following optional subjects: Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics. A Graduate or Matriculant in Arts, in any recognised University in Her Majesty's Dominions, is not required to pass the Matriculation Examination. He must produce a satisfactory certificate of good conduct, must be 21 years of age, and must have pursued Medical studies for at least four years, and have regularly attended lectures extending over four winter sessions, or have studied one year with a medical practitioner, and have subsequently attended lectures during three winter sessions. He must also have attended for at least eighteen months the practice of some General Hospital, and have attended, during two sessions, Clinical Lectures on Medicine and Surgery; and, for at least six months,

the practice of a Lying-in-Hospital; or he must have otherwise enjoyed equivalent obstetrical advantages, with attendance upon at least six cases of Labour. He must have passed in this University an examination in all the above subjects. The course of study may have been pursued either wholly in Trinity Medical School, or partly in some other recognised Medical School.

The examinations are Primary and Final. The Primary Examination embraces Descriptive Anatomy, Physiology and Microscopical Anatomy, General Chemistry and Chemical Physics, Practical Chemistry, Materia Medica and Therapeutics, Botany. It may be passed at the close of the second year's lectures.

The Final Examination embraces Medical and Surgical Anatomy. Theory and Practice of Medicine. including Medical Pathology, Principles and Practice of Surgery, Midwifery and Diseases of Women and Children, Medical Jurisprudence and Toxicology, and Sanitary Science. It takes place at the close of the last Winter Session.

Should the candidate desire it, he may undergo his entire examination in all the branches at the end of his last year's study. The examinations are held annually in the spring.

Degree of M.D.—Candidates for this Degree must be Bachelors of Medicine of at least six months' standing. They are required to send in, at least one month before Convocation, a Thesis on some Medical Subject, which Thesis must be approved by the Board of Examiners.

Fees.—These are: Primary Examination for the Degree of M.B., 10 dollars; Final ditto, 14 dollars. Full Fee, including all College Examinations, 24 dollars. There is no additional fee for the degree of M.D.

TRINITY MEDICAL COLLEGE.

THIS College is in affiliation with the University of Trinity College; also with the Univerities of Toronto and Halifax; and is recognised by the Royal Colleges of Physicians and Surgeons of Great Britian. The winter Session of 1882-83 will commence on Monday, October 2nd, 1882. Lectures will be delivered by the following professors: Dr. Walter B. Geikie (Practice of Medicine and Clinical Medicine); Dr. J. Fulton (Surgery and Clinical Surgery); Dr. J. Algernon Temple (Obstetrics and Diseases of Women and Children); Dr. J. E. Kennedy (Materia Medica and Therapeutics); Dr. H. Robertson (Anatomy, Descriptive and Surgical); Mr. Thomas Kirkham (General Chemistry and Botany); Dr. C. W. Covernton (Sanitary Science); Dr. Fred. Le M. Grasett (Medical Jurisprudence, Lecturer on Surgical Appliances); Dr. W. T. Stuart (Practical Chemistry and Toxicology); Dr. Charles Sheard, (Physiology of Histology); Dr. J. Fraser is Demonstrator of Anatomy; and Dr. G. S. Ryerson lectures on the Eye, Ear, and Throat.

Matriculation.—Students are advised before commencing their medical studies, to pass the Matriculation Examination of the Medical Council of Ontario or Quebec, either of which will be accepted by the University of Trinity College. Students from the Maritime Provinces, Ontario, or the United States, who do not desire to pass the Council Examination, will be admitted to attendance on Lectures, but must present themselves for the Matriculation Examination of Trinity University, on the second Saturday of October or March, or the Matriculation in Toronto University at the usual time. The matriculation of the Universities may be passed at any time before graduation.

The Toronto General Hospital has a large number of patients in the wards, who are visited daily by the medical officers in attendance. The attendance of out-door patients daily is also very large, and thus abundant opportunities are enjoyed by students, for acquiring a familiar knowledge of Practical Medicine and Surgery. The Burnside Lying-in Hospital, amalgamated with the Toronto General Hospital, has recently had its staff largely increased, and will afford special and valuable facilities for the study of Practical Midwifery, The large new building, close to the Hospital and School, will be very convenient for students attending its practice. The Mercer Eye and Ear Infirmary is also amalgamated with the Toronto General Hospital, and affords special facilities for students in this department. The Toronto Dispensary, establlshed several years ago, is open to students free of charge.

Daily clinical instruction will be given by members of the Hospital Staff, on all interesting cases, Medical and Surgical. Arrangements have been recently made for the delivery of daily clinics, in the theatre of the Hospital, by the respective professors in medicine and surgery of both schools, in addition to the usual clinics.

Fees.—The Fee for Anatomy, Surgery, Practice of Medicine, Obstetrics, Materia Medica, Physiology, and General Chemistry, 12 dollars each. Practical Anatomy, Practical Chemistry, Medical Jurisprudence, and Microscopy, 8 dollars each; Clinical Medicine and Clinical Surgery, 6 dollars each; Botany and Sanitary Science, 5 dollars each; Registration Fee (payable once only), 5 dollars. Students are free in all the regular Branches after having attended the School during two full courses.

McGILL UNIVERSITY FACULTY OF MEDICINE, MONTREAL,

THE Matriculation Examination comprises the following subjects: English Language (including Grammar and Composition); Arithmetic (including Vulgar and Decimal Fractions); Algebra (including Simple Equations); Geometry (first two books of Euclid); Latin (Translation and Grammar); and one of the following optional subjects: Greek, French, German, Natural Philosophy, including Mechanics, Hydrostatics, and Pneumatics. Graduates in Arts of recognised Universities are not required to submit to the Matriculation Examination; and a certificate of having passed this examinatin before the College of Physicians and Surgeons of Ontario or of Quebec is accepted.

Candidates for the degree of Doctor of Medicine and Master of Surgery must be 21 years of age, must have studied medicine four years, one Session being at this School, and must pass the necessary examinations. Graduates in Arts of recognised Universities, and students who produce evidence of having studied a year with a physician subsequent to passing the Matriculation Examination, can qualify for examination after attendence on three Sessions.

Candidates for the Final Examination must furnish testimonials of attendance on the following courses: Anatomy, Chemistry, Materia Medica and Pharmacy, Institutes of Medicine, Principles and Practice of Surgery, Midwifery and Diseases of Women and Children, Theory and Practice of Medicine, Practical Anatomy, Clinical Medicine, Clinical Surgery—each

two six-months' courses; Medical Jurisprudence—one course of six months or two courses of three months; Practical Chemistry, Botany or Zoology, Hygiene—each one three-months' course duration; not less than twenty-five Demonstrations upon Microscopic Anatomy, Physiology, and Pathology. Testimonials equivalent to, though not precisely the same as those above stated, may be presented and accepted. The Candidate must have attended during eighteen months the practice of the Montreal General Hospital, or that of some other approved Hospital, and have compounded medicines for six months. He must also have attended for at least six months the practice of the University or other approved Lying-in Hospital, and have attended at least six Accouchements.

The examinations at the close of each session are arranged as follows: *First Year.*—Elementary Anatomy and Physiology; Chemistry (Chemical Physics and Chemical Philosophy); Materia Medica; Practical Anatomy; Botany. *Second Year.*—Primary Pass Examination—Anatomy; Practical Anatomy; Physiology; Chemistry; Practical Chemistry; Materia Medica. *Third Year.*—Sessional Examination—Medical Jurisprudence, with Toxicology; Hygiene;* Medicine; Surgery; Midwifery. *Fourth Year*—Final Pass Examination—Medicine, Surgery, Midwifery, Clinical Medicine, Clinical Surgery, Medical Anatomy, Surgical Anatomy.

The Sessional Examinations at the close of the first and third years are compulsory. At the Primary Examination at the end of the second year, the student may leave two branches for the third year; in any case, Chemistry and one other must be taken at the end of the second year.

The Collegiate Courses of the School are a Winter Session, extending from the 1st of October to the end of March, and a Summer Session, from the end of the first week in April to the end of the first week in July. The fiftieth session will commence on October 1st. Lectures will be given by the following professors:—Dr. William E. Scott (Anatomy); Dr. William Wright (Materia Medica and Therapeutics); Dr. Robert P. Howard (Theory and Practice of Medicine); Dr. Duncan C. McCallum (Midwifery and the Diseases of Women and Children); Dr. J. W. Dawson, F.R.S. (Botany and Zoology); Dr. G. E. Fenwick (Surgery); Dr. G. P. Girdwood (Chemistry); Dr. George Ross (Clinical Medicine); Dr. William Osler (Institutes of Medicine); Dr. Thomas G. Roddick (Clinical Surgery); Dr. William Gardner (Medical Jurisprudence and Hygiene); and also by Dr. Frank Buller, Lecturer on Ophthalmology; Dr. Francis J. Shepherd, Demonstrator of Anatomy; Dr. Arthur A. Browne, Instructor in Obstetrics; Dr. George W. Major, Instructor in Laryngology; and Dr. Alex. D. Blackader, Instructor in Diseases of Children.

Students from Ontario and Quebec are advised to pass the Matriculation Examination of the Medical Councils of their respective Provinces before entering upon their studies. Students from the United States and Maritime Provinces must present themselves for the Matriculation Examination of the University, on the first Friday of October, or the last Friday of March.

The Montreal General Hospital has an average number of 150 patients in the wards, the majority of the cases being acute. The shipping and large manufactories contribute many examples of accidents and surgical cases. In the out-door department there is a daily attendance of between 75 and 100 patients, which affords excellent instruction in minor surgery, routine medical practice, venereal diseases, and the diseases of children. Clinical clerkships and dresserships can be obtained on application to the members of the Hospital staff. The University Dispensary was established four years ago for the purpose of affording to senior students practical instruction in diseases of women. Two other special departments have been added, viz.: diseases of children and diseases of the skin.

The clinical teaching is conducted in the wards and theatre of the General Hospital, daily, throughout the Session. Ample opportunities are afforded to the student to investigate the cases.

The fees, arranged according to years, are as follows:—First year, 76 dollars; second year, 89 dollars; third year, 74 dollars; fourth year, 64 dollars; Hospital Ticket (six months), 8 dollars; Lying-in-Hospital (six months), 8 dollars; Graduation, 20 dollars. All fees are payable strictly in advance.

* May be taken at the end of the second year.

COLLEGE OF PHYSICIANS AND SURGEONS OF QUEBEC.

EVERY medical student of the province of Quebec, before beginning his professional studies, must pass a satisfactory examination upon the following subjects: English and French, Latin, Geography, History, Arithmetic, Algebra, Geometry, and Belles-Lettres, and upon any one of the following subjects: Greek, Natural and Moral Philosophy. He must also present a certificate of a good moral character.

The examination is oral and written; and the oral part of the examination is conducted jointly by two examiners, one speaking French and the other English.

The Board may recognise an equivalent preliminary examination before any authorised College or Licensing Board in Her Majesty's Dominion, provided that the same privilege is accorded to the students of this province.

Every medical student must pursue his professional studies during not less than four years from the time of his having passed the Preliminary Examination. Of the four years, three six months' sessions at least must be passed in attendance upon lectures at an University, College, or incorporated School of Medicine recognised by this Board, the first whereof shall be so passed the year immediately succeeding the Preliminary Examination. Every student must pursue the following curriculum of study: General or Descriptive Anatomy, Practical Anatomy, Surgery, Practice of Medicine, Midwifery, Chemistry, Materia Medica and General Therapeutics, the Institutes of Medicine or Physiology, and General Pathology, Clinical Medicine, Clinical Surgery, two six months' courses of each; Medical Jurisprudence, a course of six months, or two courses of three months; Botany and Hygiene, a three months' course of each; and a course of not less than twenty-five demonstrations upon Microscopic Anatomy, Physiology, and Pathology. He must attend the general practice of an Hospital containing not less than fifty beds, under the charge of not less than two physicians or surgeons, for not less than eighteen months, or for three periods of not less than six months each. He must attend six cases of labour, and compound medicine for six months. Each six months' course must consist of 120 lectures

except those of Clinical Medicine, of Clinical Surgery, and of Medical Jurisprudence.

The total duration of the examination is one hour and forty-five minutes.

Before examination the candidate must deposit the required fee, and produce satisfactory evidence that he has attained the full age of twenty-one years, and that he has complied with the rules and regulations of the Board.

Fees.—These are: Preliminary or Matriculation Examination, 10 dollars; Diploma or Licence to Practice, 20 dollars; annual subscription, 2 dollars; registration of additional degrees or title, 1 dollar. If a Candidate for the Licence or for the Preliminary Examination be rejected, he forfeits half the fees.

BISHOP'S COLLEGE UNIVERSITY FACULTY OF MEDICINE, MONTREAL.

THIS University confers the degrees of Doctor of Medicine and Mastery of Surgery. The degree of Master of Surgery (C.M.) is not conferred on any person who does not at the same time obtain the degree of Doctor of Medicine (M.D.) Each student must undergo, prior to the commencement of his medical studies, a Preliminary Examination upon the following subjects: English, French, Latin, Arithmetic, Algebra, Geometry, History, Belles-Lettres, and one of the following optional subjects: Greek, Natural and Moral Philosophy. Candidates for degrees must have been engaged uninterruptedly for four years in medical and surgical study; but a certificate of having studied one full year with a duly licensed practitioner reduces the period of study at the University to three sessions. Students must matriculate afresh at the commencement of every session, on or before the 1st of December. Every candidate for graduation must give sufficient evidence by certificates: 1. That he has attended two six months' courses of lectures on each of the following subjects: (*a*) General or Descriptive Anatomy, Principles and Practice of Surgery, Theory and Practice of Medicine, Midwifery and Diseases of Women and Children, Chemistry, Materia Medica and Therapeutics, and Physiology; (*b*) One six months' course or two three months' courses of Medical Jurisprudence, one six months' course of Pathology, one three months' course of Botany, of Hygiene, and also of Practical Chemistry and Microscopy, and also a course of not less than twenty-five demonstrations upon Microscopic Anatomy, Physiology and Pathology; (*c*) Not less than two six months' courses of Clinical Medicine and Clinical Surgery; (*d*) Two six months' courses of Practical Anatomy; (*e*) That he has attended for at least eighteen months, or three periods of six months each, the medical and surgical practice of a Hospital, in which are contained not less than fifty beds, under the charge of not less than two physicians or surgeons, and that he has been engaged for at least six months in compounding and dispensing medicines. That he has attended at least six cases of Midwifery.

Of the four years of medical and surgical study, one full course on each branch mentioned in sections *a* and *b* must be attended in this University.

Every candidate for the degree must, on or before the 1st day of March, deliver to the Dean of the Medical Faculty, a declaration, in his own handwriting, that he has completed his twenty-first year of age (or that he will have done so before the day of graduation); and a statement of his studies, accompanied with proper certificates.

Every candidate is examined both in writing and *viva voce*. The Examinations are divided into Primary and Final. The Primary examination comprehends Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, and Botany or Zoology. The Final Examination includes Practice of Medicine, Clinical Medicine, Surgery, Clinical Surgery, Midwifery and the Diseases of Women and Children, Medical Jurisprudence, Pathology, and Hygiene.

Candidates may be admitted to examination on the Primary branches at the end of the third year of their study. The Final Examination does not take place until the candidate has completed his fourth year.

HALIFAX UNIVERSITY AND MEDICAL COLLEGE.

CANDIDATES for the degree of Doctor of Medicine must have attended lectures for at least four years after passing the Matriculation Examination. This examination comprises the following subjects: 1. *Compulsory:* English Language (including Grammar, Composition, and Writing from Dictation); Arithmetic (including Vulgar and Decimal Fractions and the Extraction of the Square Root); Algebra (to the end of Simple Equations); Geometry (first two books of Euclid); Latin (one book, Translation and Grammar). 2. *Optional:* One of the following subjects: History of England, with questions in Modern Geography; French Translation; German Translation; One Greek Book; Natural Philosophy (including Mechanics, Hydrostatics, and Pneumatics); History of Nova Scotia; History of the Dominion of Canada. The fee is five dollars, and is not returned in case of failure. Candidates for this examination must be at least 16 years of age. Graduates in Arts of recognised Universities are not required to pass the Matriculation Examination.

Instruction in medicine in the surgery of a recognised practitioner for one year is received as equivalent to a year of study.

The professional examination is divided into primary and final. The former comprises Anatomy, Chemistry, Materia Medica, Physiology and Botany, or Zoology; the latter, Medicine, Surgery, Obstetrics, and Medical Jurisprudence. Candidates may present themselves for the primary examination at the end of the third session, or third year of study.

Candidates for the final examination must produce certificates of having attended two six months' courses each of Anatomy, Chemistry, Materia Medica, Physiology, Surgery, Midwifery, Medicine, Practical Anatomy, Clinical Medicine, and Clinical Surgery; one three months' course each of Practical Pharmacy, Medical Jurisprudence, Botany, and Practical Chemistry; the practice of a recognised Hospital during twelve months; the practice of a Lying-in Hospital for at least six months (or of having attended at least six cases of labour); of having had three months' practice in Dispensing; and of having acquired proficiency in the practice of Vaccination. One session at least must be attended in the Halifax Medical College. Each candidate must present a thesis on some medical or surgical subject, and sign a declaration that he is twenty-one years of age. The examination is oral and written, in all branches; and there is a Clinical Examination in Medicine and Surgery at the bedside.

The fee for the degree of Doctor of Medicine and

Master of Surgery is twenty dollars, with a registration fee of one dollar.

COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.

ALL persons, whatever qualifications they may possess, must be examined by this College in order to obtain a licence to practise in the province of Ontario.

Candidates for the membership of this College must spend four years (forty-eight months) in professional studies after having passed a matriculation examination in the English Language, Arithmetic, Algebra (including Simple Equations), Geometry, (first two books of Euclid), Latin (Translation and Grammar), and either Greek, French, German, or Natural Philosophy (including Mechanics, Hydrostatics, and Pneumatics). Graduates in Arts, or students who have matriculated in Arts in any University in the British dominions, are not required to pass the Matriculation Examination; and Graduates in Arts may pass the final examination at the end of three years.

Every candidate must have attended, in an University, college, or school of medicine, two courses of six months each, in Anatomy, Practical Anatomy, Physiology (including Histology), Theoretical Chemistry, Materia Medica and Therapeutics, Medicine, Surgery, Midwifery and Diseases of Women and Children, Clinical Medicine and Clinical Surgery; one course of six months, or two courses of three months each, on Medical Jurisprudence; one course of three months in Practical Chemistry and on Botany; one course of not less than twenty-five demonstrations on Histology, Physiology, and Pathology; and one course of twenty-five lectures on Sanitary Science.

The Professional Examination is divided into primary and final. The Primary Examination, at the end of the second winter session, comprises Descriptive Anatomy, Physiology and Histology, Theoretical and Practical Chemistry, Toxicology, Sanitary Science, and Botany. (Graduates in Arts who have attended one course of lectures on Botany, and two on Theoretical Chemistry, and have passed an examination in these subjects, are not subjected to further examination thereon.) The Final Examination comprises Medical and Surgical Anatomy, Theory and Practice of Medicine and Medical Pathology, Surgery and Operative Surgery, Midwifery and Diseases of Women and Children, Operative Midwifery, Medical Jurisprudence, and Materia Medica and Therapeutics.

Before being admitted to the Final Examination, the candidate must have spent six months in the office of a regularly qualified medical practitioner, in dispensing medicine; have attended the practice of a general hospital for twenty-five months; have attended six courses of midwifery; and have attained the age of twenty-one years.

The Primary Examination is entirely oral; the Final is entirely written. Any candidate who fails in any one branch at the Primary Examination is held to have failed in all. Any candidate who passes in four or more branches at the Final Examination, but fails in the others, is required to pass in the latter only at a subsequent examination. Persons intending to practise Homœopathy are, on application, examined by Homœopathic Examiners.

Persons from recognised colleges outside the provinces of Ontario and Quebec must pass the matriculation examination, and afterwards attend one full winter course of lectures during two winter sessions in some one of the Ontario Medical Schools, and such other course or courses as may be necessary to complete the required curriculum; and must pass all the examinations.

The *Fees* are: Matriculation Examination, 10 dollars; Registration, for students not examined by the College Examiners, 10 dollars; Primary Examination, 20 dollars; Final Examination, including Registration, 30 dollars; Diploma of Membership, 10 dollars; annual contribution from members of the college, 1 dollar. No portion of the examination fees is returned to unsuccessful candidates.

TEXT-BOOKS.

THE object of the subjoined notes is to inform the student, in general terms, of the works which he may use as text-books. The list is not intended to be exclusive; nor is it our purpose to say always which book is the best in any subject. Some students learn best from one book; others from another. Again, some books are more adapted than others to the teaching of the school to which the pupil belongs. In addition to the ordinary text-books, reference will be made to some which, though not absolutely necessary to the student, may be studied with advantage.

ANATOMY AND PHYSIOLOGY.

The anatomy of the bones is described in the chief text-books, such as those of Quain and Wilson; but there are also some special works on the subject. Among them are Mr. Luther Holden's *Human Osteology* (sixth edition, J. and A. Churchill). The same firm publishes a *Student's Guide to Osteology*, by Mr. Wagstaffe. There is also Mr. Norton's *Osteology for Students* (Baillière, Tindal, and Cox). The anatomy of the joints is specially and ably treated in Mr. Henry Morris's *Anatomy of the Joints of Man* (J. and A. Churchill). For the early study of anatomy, Mr. St. George Mivart's *Elementary Lessons in Anatomy* (Macmillan and Co.) will be found instructive. The interest of the subject is increased by a demonstration of the chief relations of the structure of man to that of other animals. Among the indispensable text-books treating of human anatomy as a whole are, Quain's *Elements of Anatomy* (Longmans and Co.), edited by Drs. Sharpey and Allen Thomson, and Mr. Schäfer; Gray's *Anatomy* (Longmans), edited by Mr. Holmes; and Wilson's *Anatomist's Vade-Mecum*, tenth edition, by Dr. G. Buchanan and Mr. H. E. Clark of Glasgow (J. and A. Churchill). Messrs. Smith, Elder, and Co. announce the early publication of the first part of a work on *Human Morphology, a Treatise on Practical and Applied Anatomy*, by Mr. H. A. Reeves. For use in the dissecting-room, Ellis's *Demonstrations of Anatomy* (ninth edition, Smith, Elder, and Co.) has long established its claim as a trustworthy guide. It contains reduced copies of plates in the author's *Illustrations of Dissections*—a work which from its price the student can scarcely be expected to purchase, but which he should not fail to consult for assistance. Other good books for dissectors are Mr. Christopher Heath's *Practical Anatomy* (fifth edition, J. and A. Churchill) and Dr. Carrington's *Manual of Dissections of the Human Body* (George Bell and Sons). Dr. Cleland of Glasgow has also

brought out a concise and accurate *Directory for the Dissection of the Human Body* (second edition, Smith, Elder, and Co.); and a *Dissector's Guide*, with illustrations, by Dr. D. J. Cunningham, is published by Maclachlan and Stewart of Edinburgh. Messrs. Hensman and Fisher's *Anatomical Outlines for the Use of Students in the Dissecting-room and Surgical Class-room* (Longmans and Co.) is useful. Braune's *Atlas of Topographical Anatomy*, translated and edited by Mr. Bellamy (J. and A. Churchill), is a valuable book for reference. The drawings are made from plane sections of foreign bodies. There are also Professor W. Turner's *Atlas of Human Anatomy* (A. Johnston), Bock's *Atlas of Human Anatomy* (Renshaw), and Mr. Godlee's *Atlas of Human Anatomy* (J. and A. Churchill); also Mr. Flower's *Diagrams of the Nerves of the Human Body* (third edition, J. and A. Churchill). *A Descriptive Atlas of Anatomy*, by Mr. Noble Smith, has been published by Smith, Elder, and Co. There are also the well-known Quain and Wilson's Anatomical Plates (Smith, Elder, and Co.). Mr. Thomas Cooke's *Tablets of Anatomy and Physiology* (second edition) contain much information in a condensed form, and gives useful aid in the study of the larger works. A third edition has been recently published of Dr. J. H. Power's *Anatomy of the Arteries* (Fannin and Co.; Longmans and Co.; and Simpkin, Marshall and Co.). To students who feel interest in the study of Zoology and Comparative Anatomy, we would recommend, as works that will give much information without being too large or costly, Mr. Flower's *Osteology of the Mammalia* (Macmillan and Co.), and Dr. H. A. Nicholson's *Manual of Zoology*, and *Advanced Text-Book of Zoology* (Blackwood); as well as Huxley's *Manuals of the Anatomy of Vertebrated and Invertebrated Animals* (J. and A. Churchill), and Huxley and Martin's *Practical Biology*. Professor Gegenbaur's *Elements of Comparative Anatomy*, translated by Mr. F. J. Bell (Macmillan and Co.) is a very complete work. For the study of Embryology, the chapter by Dr. Allen Thomson in Quain's *Anatomy*, or the *Elements of Embryology*, by Dr. M. Foster and Mr. Balfour (Macmillan and Co.), should be consulted. The subject has been most ably treated by the late Mr. Balfour in a *Treatise on Comparative Embryology* (Macmillan and Co.).

For instruction in Histology, Mr. Schäfer's *Course of Practical Histology* (Smith, Elder, and Co.) and Dr. Stirling's *Text-Book of Practical Histology* (Smith, Elder, and Co.) are excellent guides; as is also the chapter on General Anatomy in Quain's *Anatomy*. A third edition of Dr. Rutherford's *Outlines of Practical Histology* (J. and A. Churchill) is in course of preparation. The *Atlas of Histology*, by Dr. E. Klein and Mr. Noble Smith (Smith, Elder, and Co.), is a valuable work for reference. Other works which may be consulted are Professor Stricker's collection of essays on *Human and Comparative Histology* (New Sydenham Society) and Heinrich Frey's *Histology and Histo-Chemistry of Man*, translated by Mr. Barker (J. and A. Churchill).

In Physiology, the beginner will find trustworthy guides in Huxley's *Lessons in Elementary Physiology* and Huxley and Martin's *Elementary Biology* (both published by Macmillan and Co.); and, as text-books for use in medical schools, Dr. McKendrick's *Outlines of Physiology in its Relation to Man* (Maclehose, Glasgow; and Macmillan and Co.), Kirkes's *Handbook of Physiology*, edited by Mr. Morrant Baker (tenth edition, John Murray), and Dr. Michael Foster's *Text-book of Physiology* (new edition, Macmillan and Co.), are to be recommended; and, for more advanced students, Dr. L. Hermann's *Elements of Physiology*, translated by Professor Gamgee (second edition, Smith, Elder, and Co.), Flint's *Text-Book of Human Physiology* (H. K. Lewis), and Dr. Carpenter's *Principles of Human Physiology*, by Mr. Power (ninth edition, J. and A. Churchill). The increased study in recent years of Practical Physiology has led to the publication of several guides to this department. Dr. Burdon Sanderson has prepared a manual of *Practical Exercises in Physiology* (second edition, H. K. Lewis). *An Elementary Course of Practical Physiology* by Dr. M. Foster and Mr. Langley (Macmillan and Co.) is also a book that can be recommended to beginners; while the more elaborate *Handbook for the Physiological Laboratory*, by Drs. Sanderson, Klein, Foster, and Brunton (J. and A. Churchill) is more fitted for those who desire an extended knowledge of practical physiology.

As guides in the use of the Microscope, there are Dr. Beale's *Microscope in Medicine*, Dr. Carpenter on the *Microscope* (sixth edition, J. and A. Churchill), Wythe's *Microscopist's Manual* (third edition, J. and A. Churchill), Marsh's *Section-Cutting* (second edition, J. and A. Churchill), and Martin's *Manual of Microscopic Mounting* (second edition, J. and A. Churchill).

CHEMISTRY.

In Chemistry, among the most approved text-books, are Fownes' *Manual of Chemistry*, edited, in two volumes, Inorganic and Organic, by Mr. Watts (twelfth edition, J. and A. Churchill); Roscoe's *Lessons in Elementary Chemistry;* Miller's *Elements of Chemistry* (Longmans and Co.); Bloxam's *Chemistry, Inorganic and Organic* (J. and A. Churchill); Williamson's *Chemistry for Students* (Macmillan and Co.); and Tidy's *Handbook of Modern Chemistry* (J. and A. Churchill.) A little book by Mr. R. M. Murray, entitled *Chemical Notes and Equations for the use of Students* (Maclachlan and Stewart), gives an useful outline of the fundamental principles of chemical science. An elaborate *Treatise in Chemistry*, by Professors Roscoe and Schorlemmer, of Owens College, Manchester, is in course of publication by Macmillan and Co.; Bowman and Bloxam's *Practical Chemistry*, seventh edition (J. and A. Churchill), has an established reputation as a practical guide.

For instruction in Physiological Chemistry, there are Dr. Ralfe's *Outlines of Physiological Chemistry* (H. K. Lewis), and Mr. S. W. Moore's *Notes of Demonstrations in Physiological Chemistry* (Smith, Elder, and Co.) Dr. Arthur Gamgee's *Text-Book of the Physiological Chemistry of the Animal Body* (Macmillan and Co.), of which the first volume has been published, is likely to become a standard work on this subject.

BOTANY.

The text-books of Botany in most general use are Bentley's *Manual of Botany* (fourth edition, J. and A. Churchill); Henfrey's *Elementary Course of Botany*, third edition, by Dr. M. T. Masters (Van Voorst); Balfour's *Manual of Botany* (A. and C. Black); Oliver's *Lessons in Elementary Botany;* Prantl and Vines' *Text-book of Botany*. Sach's *Text-book of Botany*, translated by Mr. A. W. Bennett and Mr. W. T. Dyer (Macmillan and Co.) is a

valuable work of reference in regard to Structural and Physiological Botany. Bentley and Trimen's admirable plates of *Medicinal Plants* (J. and A. Churchill) should be consulted by the student both of Botany and of Materia Medica.

MATERIA MEDICA AND THERAPEUTICS.

A well-known and useful book as a manual of materia medica is Dr. Garrod's *Essentials of Materia Medica and Therapeutics*, edited by Dr. Buchanan Baxter (sixth edition, Longmans and Co.). It requires however, to be supplemented by a treatise on therapeutics; for which purpose Dr. Ringer's *Handbook of Therapeutics* (ninth edition, H. K. Lewis), Dr. Waring's *Manual of Practical Therapeutics* (third edition, J. and A. Churchill), Dr. Alexander Harvey's *First Lines of Therapeutics* (H. K. Lewis), Dr. Farquharson's *Guide to Therapeutics* (second edition, Smith, Elder, and Co.), and Dr. Sparks's edition of Binz's *Elements of Therapeutics* (J. and A. Churchill), are to be recommended. Dr. Milner Fothergill's *Practitioner's Handbook of Treatment* (second edition, Macmillan and Co.) will be of value to those who are interested in the endeavour to show the agreement between science and practice. Dr. H. C. Wood's *Treatise on Therapeutics* (Smith, Elder, and Co.) pays special attention to the therapeutic action of drugs. Other useful books are Dr. W. G. Smith's *Commentary on the British Pharmacopœia* (Smith, Elder, and Co.), Royle and Harley's *Manual of Materia Medica and Therapeutics* (sixth edition, J. and A. Churchill), Neligan's *Medicines*, edited by Mr. Macnamara (Fannin and Co.), Dr. Phillips's *Materia Medica and Therapeutics* (J. and A. Churchill); Dr. Whitla's *Pharmacy, Materia Medica, and Therapeutics* (Renshaw); Dr. Scoresby-Jackson's *Note-Book of Materia Medica*, edited by Dr. Moinet (fourth edition, Maclachlan and Stewart, and Simpkin, Marshall, and Co.), Dr. Handsel Griffiths' *Materia Medica and Pharmacy*, edited by Dr. Duffey (Baillière, Tindal, and Cox; and Fannin and Co., Dublin), Dr. R. Bartholow's *Practical Treatise on Materia Medica and Therapeutics* (H. K. Lewis), Thorowgood's *Student's Guide to Materia Medica* (second edition, J. and A. Churchill), Milne's *Manual of Materia Medica and Therapeutics*, fourth edition, by Dr. W. Craig (Livingstone, Edinburgh; and Simpkin, Marshall, and Co.), and Dr. Phillips's *Materia Medica and Therapeutics* (J. and A. Churchill). Dr. Lauder Brunton's *Tables of Materia Medica* (Smith, Elder, and Co.) form a most comprehensive and valuable syllabus, and will be very useful to the student. So also are Dr. I. Owen's *Tables of Materia Medica* (fourth edition, J. and A. Churchill). Dr. W. H. Griffiths' *Lessons on Prescriptions, and the Art of Prescribing* (Macmillan and Co.) is a useful work. We have already referred, under the head of Botany, to Messrs. Bentley and Trimen's *Medicinal Plants*.

As text-books in the application of Electricity to Medicine, besides Dr. Althaus's *Treatise on Medical Electricity* (Longmans and Co.), the following are likely to prove useful to students; viz., a *Text-Book of Electricity in Medicine and Surgery*, by Dr. G. V. Poore (Smith, Elder, and Co.); a *Handbook of Medical and Surgical Electricity*, and *How to Use a Galvanic Battery*, by Dr. H. Tibbits (second edition, J. and A. Churchill); and Mr. A. de Watteville's *Practical Introduction to Medical Electricity* (H. K. Lewis).

PATHOLOGY.

As a manual of pathology, Dr. T. H. Green's *Introduction to Pathology and Morbid Anatomy* (Renshaw) has gained a deservedly high reputation. The *Lectures on Pathological Anatomy* of Drs. Wilks and Moxon (second edition, J. and A. Churchill), and Dr. J. F. Payne's improved edition of Jones and Sieveking's *Manual of Pathological Anatomy* (J. and A. Churchill), are also good books. A second edition of an English translation of Virchow's treatise on *Post Mortem Examinations: the Art of Making them*, is published by J. and A. Churchill. Messrs. Smith, Elder, and Co. have published a *Manual of Necroscopy*, by Dr. A. H. Newth, which is intended as a guide to the performance of *post mortem* examinations. Dr. R. J. Lee has brought out a little book entitled *Pathological Anatomy: a Guide in the Post Mortem Room* (Richards, Great Queen Street). It is intended as an introduction to other works on the subject. We would also strongly recommend students to consult, and to possess, if possible, Rindfleisch's *Manual of Pathological Histology*, edited by the New Sydenham Society. Other highly valuable works for reference are Dr. Greenfield's translation of Lancereaux's *Atlas of Pathological Anatomy* (J. and A. Churchill), and an English translation of a *Manual of Pathological Anatomy*, by Cornil and Ranvier (Smith, Elder, and Co.)

MEDICINE.

For the student who is commencing his clinical studies there are several very good guide-books. Among them are Dr. A. W. Barclay's *Manual of Medical Diagnosis* (third edition, J. and A. Churchill), Dr. S. Fenwick's *Student's Guide to Medical Diagnosis* (fifth edition, J. and A. Churchill); Dr. O. Sturges' *Introduction to the Study of Clinical Medicine* (Smith, Elder, and Co.); Dr. Finlayson's *Clinical Manual for the Study of Medical Cases* (Smith, Elder, and Co.); Dr. J. Little's *Note-book for Students beginning the Study of Disease at the Bedside* (third edition, Fannin and Co.); and Dr. Warner's *Student's Guide to Medical Case-taking* (J. and A. Churchill.) More advanced students and practitioners may consult with advantage Dr. Da Costa's *Medical Diagnosis* (third edition, Smith, Elder, and Co.) As a guide in physical diagnosis, Dr. Gee's *Auscultation and Percussion* (Smith, Elder, and Co.) may be safely trusted. Other useful books for the same purpose are Flint's *Manual of Percussion and Auscultation* (J. and A. Churchill); and Dr. Reginald Thompson's *Physical Examination of the Chest in Health and Disease* (H. Renshaw).

Among text-books in General Medicine, which may be recommended for the use of the student, are Dr. F. T. Roberts's *Handbook of the Theory and Practice of Medicine* (fourth edition, H. K. Lewis), Dr. J. S. Bristowe's *Treatise on the Theory and Practice of Medicine* (fourth edition, Smith, Elder, and Co.), Dr. Tanner's *Practice of Medicine* (edited by Dr. Broadbent), Dr. Aitken's *Science and Practice of Medicine* (seventh edition, C. Griffin and Co.); Dr. H. Hartshorne's *Essentials of the Principles and Practice of Medicine* (Smith, Elder, and Co.), Dr. Aitken's *Outlines of the Science and Practice of Medicine* (second edition, C. Griffin and Co.); Dr. Flint's *Clinical Medicine* (J. and A. Churchill); Dr. Charteris's *Student's Guide to the Practice of Medicine* (third edition, J. and A. Churchill); and

Dr. A. Carter's *Elements of Practical Medicine*. The advanced student and the practitioner will do well to consult Dr. Russell Reynolds' *System of Medicine* (five volumes, Macmillan and Co.); Trousseau's *Lectures on Clinical Medicine* (New Sydenham Society); Ziemssen's *Cyclopædia of the Practice of Medicine* (Sampson Low and Co.); Dr. Niemeyer's *Text-Book of Practical Medicine* (H. K. Lewis): Sir Thomas Watson's *Lectures on the Principles and Practice of Physic* (Longmans and Co.).

SURGERY.

Mr. Erichsen's *Science and Art of Surgery* (seventh edition, Longmans and Co.), Mr. Holmes's *Surgery—its Principles and Practice* (third edition, Smith, Elder, and Co.), Mr. Bryant's *Practice of Surgery* (third edition, J. and A. Churchill), and Mr. Gant's *Science and Practice of Surgery* (second edition, Baillière, Tindal, and Cox), are all very complete works, one of which should be in the possession of the student. For those who prefer smaller and more condensed works, there is the well known Druitt's *Surgeon's Vade-Mecum* (eleventh edition, J. and A. Churchill). Mr. Christopher Heath has brought out a *Student's Guide to Surgical Diagnosis* (J. and A. Churchill). Among the works more specially devoted to Practical Surgery, a foremost place is held by the late Sir William Fergusson's excellent *System of Practical Surgery* (fifth edition, J. and A. Churchill). Other books which may be consulted with advantage are, Mr. Holmes's *System of Surgery* (Longmans and Co.), Mr. Spence's *Lectures on Surgery* (A. and C. Black), Dr. S. D. Gross's *System of Surgery* (fifth edition, Smith, Elder, and Co.), and Billroth's *Lectures on Surgical Pathology and Therapeutics* (New Sydenham Society).

For the guidance of the student who is being instructed in practical and operative surgery, there are several good books. Mr. Christopher Heath's *Manual of Minor Surgery and Bandaging* (sixth edition, J. and A. Churchill) has for several years enjoyed a high reputation as a trustworthy guide. The *Manual of Operative Surgery on the Dead Body*, by Mr. Thomas Smith and Mr. Walsham (Longmans and Co.); Mr. Berkeley Hill's *Essentials of Bandaging* (fourth edition, Smith, Elder, and Co.); Mr. Bellamy's *Student's Guide to Surgical Anatomy* (second edition, J. and A. Churchill); Mr. Joseph Bell's *Manual of the Operations of Surgery* (fourth edition, Machlachlan and Stewart); and Stimson's *Operative Surgery* (Lewis), are also works which can be recommended. Other larger works, most valuable for reference—and to be procured by the student if possible—are Mr. Jonathan Hutchinson's *Illustrations of Clinical Surgery*, consisting of plates, woodcuts, etc., illustrating surgical diseases, symptoms, accidents, operations, etc. (published in fasciculi by J. and A. Churchill); Mr. C. Heath's *Course of Operative Surgery*, with coloured plates (J. and A. Churchill); and Mr. Norton's edition of Bernard and Huette's *Text-Book of Operative Surgery* (Baillière, Tindal, and Cox). For the student of Military Surgery, Surgeon-General Longmore's work on *Gunshot Injuries* (Longmans and Co.) and Surgeon-Major Porter's *Surgeon's Pocket-Book*, are essential. A translation, by Dr. Clutton, of Professor Esmarch's *Surgeon's Handbook on the Treatment of Wounded in War*, is also of value.

MIDWIFERY; AND DISEASES OF WOMEN AND CHILDREN.

The text-books of Obstetric Medicine which hold the first place in the present day are, Dr. W. S. Playfair's *Treatise on the Science and Practice of Midwifery* (fourth edition, Smith, Elder, and Co.); and Dr. Leishman's *System of Midwifery* (third edition, J. Maclehose, Glasgow, and Macmillan and Co.) Every student should have one or the other of these. For those who prefer smaller books, Dr. D. Lloyd Roberts's *Student's Guide to the Practice of Midwifery* (second edition, J. and A. Churchill) will be useful; there are also Dr. Alfred Meadows's *Manual of Midwifery* (Renshaw) and Dr. C. H. Carter's translation of Karl Schröder's *Manual of Midwifery* (J. and A. Churchill). Drs. Robert and Fancourt Barnes are preparing a *Handbook on Obstetrics* (Smith, Elder, and Co.) As a work of illustrations, Dr. Martin's *Atlas of Obstetrics* and *Gynæcology*, edited by Dr. Fancourt Barnes (H. K. Lewis), is to be recommended. Dr. J. G. Swayne's *Obstetric Aphorisms* (seventh edition, J. and A. Churchill) are very useful. Dr. Barnes's *Lectures on Obstetric Operations* (third edition, J. and A. Churchill) should be in the possession of every advanced student and general practitioner; as should also the *Clinical History of the Medical and Surgical Diseases of Women*, by the same author (second edition, J. and A. Churchill). Dr. West's *Lectures on the Diseases of Women* (fourth edition, with additions by Dr. Matthews Duncan, (J. and A. Churchill); Dr. Graily Hewitt's *Diagnosis and Treatment of Diseases of Women* (third edition, Longmans and Co.); Dr. Matthews Duncan's *Clinical Lectures on the Diseases of Women* (J. and A. Churchill); the late Dr. F. Churchill's work on the *Diseases of Women* (sixth edition, Fannin and Co.); Dr. Edis's *Diseases of Women* (second edition, Smith, Elder, and Co.); Mr. Lawson Tait's *Diseases of Women* (Williams and Norgate); Dr. Emmet's *Principles and Practice of Gynæcology* (second edition, J. and A. Churchill); Dr. Gaillard Thomas's *Practical Treatise on the Diseases of Women*; Dr. Heywood Smith's *Practical Gynæcology* (J. and A. Churchill); and Mr. Spencer Wells's treatise on *Diseases of the Ovaries* (J. and A. Churchill), are all valuable books. Other books which will be found useful are Dr. Galabin's *Student's Guide to Diseases of Women* (second edition, J. and A. Churchill); Hart and Barbour's *Manual of Gynæcology* (Maclachlan and Stewart; and Simpkin, Marshall and Co.); and Dr. Halliday Croom's *Minor Gynæcological Operations and Appliances* (Livingstone, Edinburgh; and Simpkin, Marshall and Co.)

Among text-books on Diseases of Children, must be mentioned Dr. West's well known *Lectures on the Diseases of Infancy and Childhood* (Longmans and Co.); Dr. Fleetwood Churchill's treatise on *The Diseases of Children* (third edition, Fannin and Co.); Dr. W. H. Day's *Manual on the Diseases of Children* (J. and A. Churchill); M. Guersant's *Surgical Diseases of Infants and Children*, translated by Dr. Dunglison (Smith, Elder, and Co.); Meigs and Pepper's *Practical Treatise on Diseases of Children* (H. K. Lewis); Dr. Eustace Smith's *Clinical Studies of Disease in Children* (J. and A. Churchill); Dr. J. L. Smith's *Treatise on the Diseases of Infancy and Childhood* (fourth edition, H. K. Lewis); Dr. Tanner and Dr. Meadows' *Practical Treatise on Diseases of Infancy and Childhood* (third edition, H. Renshaw); and Steiner's *Compendium of the Diseases of Children*, translated by Mr. Lawson Tait (J. and A. Churchill).

SPECIAL SUBJECTS.

There are several good text-books of the special departments which are taught in the schools.—For students of Psychological Medicine, the chief work is Bucknill and Tuke's *Manual of Psychological Medicine* (fourth edition, J. and A. Churchill).—For students of Ophthalmic Surgery, Mr. R. B. Carter's *Treatise on Diseases of the Eye* (Macmillan and Co.); Mr. Nettleship's *Student's Guide to Diseases of the Eye* (second edition, J. and A. Churchill); Mr. Macnamara's *Manual of Diseases of the Eye* (third edition, J. and A. Churchill); Mr. Wharton Jones's *Manual of Ophthalmic Medicine and Surgery* (third edition, J. and A. Churchill); Mr. George Lawson's *Diseases and Injuries of the Eye* (fourth edition, Renshaw); Mr. B. T. Lowne's *Handbook of Ophthalmic Surgery* (Smith, Elder, and Co.), are books that will be useful. Messrs. Churchill have also published the second edition of a little book by Mr. Charles Higgens, entitled *Hints on Ophthalmic Out-patient Practice.* Dr. de Wecker's *Ocular Therapeutics*, translated by Dr. Litton Forbes (Smith, Elder, and Co.), may be consulted with advantage. Mr. E. A. Brown, of the Liverpool Eye and Ear Infirmary, has brought out a little book for instructing students *How to Use the Ophthalmoscope* (Trübner and Co.); and a valuable *Manual and Atlas of Medical Ophthalmoscopy* by Dr. Gowers (J. and A. Churchill) has been published.—In Aural Surgery, Mr. Dalby's book on *Diseases and Injuries of the Ear* (second edition, J. and A. Churchill) is very good; there is also a book by Mr. G. P. Field on *Diseases of the Ear* (third edition, Renshaw); while Dr. Burnett's work on *The Ear: its Anatomy, Physiology, and Diseases* (J. and A. Churchill), and Dr. St. John Roosa's *Practical Treatise on Diseases of the Ear* (fourth edition, H. K. Lewis) are valuable and elaborate works. Dr. Macnaughton Jones has brought out a good *Practical Treatise on Aural Surgery*, and also a well-executed *Atlas of the Diseases of the Membrana Tympani and Auricle* (J. and A. Churchill).—For the use of students in Dermatology, there is the late Dr. Tilbury Fox's treatise on *Skin-Diseases, their Description, Pathology, Diagnosis, and Treatment* (new edition, H. Renshaw). Mr. Malcolm Morris's *Manual of Skin-Diseases* is a very reliable guide. Mr. Erasmus Wilson's *Treatise on Diseases of the Skin*, and his *Lectures on Dermatology* (J. and A. Churchill) are well known and valuable works. Dr. Pullar has translated the *Text-Book of Skin-Diseases*, by Dr. Neumann of Vienna (Hardwicke and Bogue). Dr. R. Liveing's *Handbook on Diseases of the Skin* (third edition), Longmans and Co.), is well deserving of recommendation; so also is Dr. McCall Anderson's *Treatment of Diseases of the Skin* (Macmillan and Co.) Dr. Tilbury Fox has supplied an excellent *Atlas of Skin-Diseases* (Renshaw); while a work with a similar title by Dr. Duhring of Philadelphia (Lippincott and Co.) is also very good.—For students of Dental Surgery, the following books are published by Messrs. J. and A. Churchill: Tomes's *Manual of Dental Surgery* (second edition); Tomes's *Manual of Dental Anatomy* (second edition); Taft's *Practical Treatise on Operative Dentistry* (third edition); Sewill's *Student's Guide to Dental Anatomy and Surgery;* Stocken's *Elements of Dental Materia Medica and Therapeutics* (third edition); and Coles's *Manual of Dental Mechanics* (second edition). A *Manual of Dental Surgery and Pathology*, by Mr. A. Coleman, has been published by Smith, Elder, and Co.

FORENSIC MEDICINE AND HYGIENE.

As elementary works of convenient size, and containing valuable instruction, Dr. A. S. Taylor's *Manual of Medical Jurisprudence* (tenth edition, J. and A. Churchill), and Guy and Ferrier's *Principles of Forensic Medicine* (Renshaw) are to be recommended. The more advanced student and the practitioner should consult Dr. Taylor's *Principles and Practice of Medical Jurisprudence* (second edition, J. and A. Churchill); the *Handybook of Forensic Medicine and Toxicology*, by the late Dr. Bathurst Woodman and Dr. Tidy (J. and A. Churchill); Dr. Ogston's *Lectures on Medical Jurisprudence* (J. and A. Churchill); and the translation of Casper's *Forensic Medicine*, published by the New Sydenham Society. The last-named book describes the manner in which medico-legal investigations are carried out on the Continent. The first part of a work on *Legal Medicine*, by Dr. C. M. Tidy (Smith, Elder and Co.), has lately appeared.

Under the head of Hygiene the principal books are, Dr. Parkes's *Manual of Practical Hygiene*, edited by Dr. de Chaumont (fifth edition, J. and A. Churchill); Wilson's *Handbook of Hygiene and Sanitary Science* (fourth edition, J. and A. Churchill); Dr. de Chaumont's *Lectures on State Medicine* (Smith, Elder, and Co.); Hart's *Manual of Public Health* (Smith, Elder, and Co.); and Hart's *Truth about Vaccination* (Smith, Elder, and Co.).

REVIEWS.

The Medical Digest, or Busy Practitioner's 'Vade-Mecum', a Means of Readily Acquiring Information upon the Principal Contributions to Medical Science during the last Thirty-five Years. By RICHARD NEALE, M.D., Member of the Dutch Medical Society of Batavia, Java. Second Editon. London: Ledger Smith, and Co. 1882.

IT is with feelings of much satisfaction that we record the appearance of the second edition of Dr. Neale's *Medical Digest.* It is probably within the cognisance of most of our readers that this laborious work, the first edition of which was published by the New Sydenham Society, was originally compiled by the author for his own use and without any thought of publication. It is not a mere index, such for example as the *Index Medicus*, but a Digest of the contents of most of the medical periodicals of the time. It is furnished with an admirable and copious Index, containing, it is said, nearly 10,000 references. We have tested the work in every possible way, and are astonished at its wonderful accuracy and at the stores of information which it contains. Dr. Neale appears to have made a note of every subject that could by any chance prove of interest to medical men. Let us take a few examples. It is probable that at the present moment many teachers in our schools of medicine, both in London and in the Provinces, are interested in the subject of Introductory Addresses, many perhaps being in doubt and tribulation as to the terms in which to address their students on the first of October. Their difficulties need be of short duration, for they have only to turn to the *Digest* to find references to the utter-

ances of Paget, Erichsen, Reynolds, Salter, Stokes, Hinton, and a host of others whose names with us are as household words. Again, let us suppose that information is required as to the mode of obtaining a medical degree. Dr. Neale answers us, and in a moment tells us how we can best learn about the Brussels M.D., the London M.D., the M.D.'s of the German Universities, and many others. If we want references to the therapeutics of recent remedies we are afforded a ready means of obtaining the required information. On glancing through the Index we find mentioned agaric, chaulmoogra, cheken, grindelia, hamamelis, homatropia, hydrastis, iodoform, jaborandi, muscarine, nitro-glycerine, papaya, pepsine, pituri, woorara, and many others too frequently omitted even in our standard works on materia medica. As we have said, the book is a kind of universal reference work, and it contains many apparently strange headings, such as 'Chimney on Fire', 'Cotton Famine', 'Gull, Johnson, Bravo Case', 'Livingstone Pills', 'Look-at-his-face Disease', 'Louise Lateau', 'Lucid Intervals', 'Lucifer Matches', 'Lunar Influence', 'Perambulators', and 'Wives of Medical Men, Social Pariahs'. There are some misprints, but fewer than might be expected in a book containing over 20,000 distinct entries. Of the value of the work, it is impossible to speak too highly. Writers on medical subjects are so accustomed to use it that they could not possibly do without it. The author tells us that it took him thirty-five years to compile, and it is certain that in almost any country but our own he would receive some State recognition. As it is, he has the satisfaction of knowing that he has conferred an inestimable boon on all who are engaged in medical work in any shape or form.

WILLIAM MURRELL, M.D.

Catalogue of Surgical and Physiological Instruments, etc. Newcastle-upon-Tyne: Brady and Martin.

THIS is a well-arranged catalogue, including the best and most recent forms of instruments now used by surgeons, and not rendered unnecessarily bulky by descriptions and illustrations of instruments now out of date. The alphabetical arrangements of the different sets of instruments, with secondary headings, seems to be very convenient. The illustrations are numerous and well-executed, and, doubtless, would give a good idea of the instruments and apparatus which they are intended to depict. Those marked 90 and 91, and illustrating what are stated to be cases for hypodermic syringes, are inserted, we imagine, rather for show than for serious use. Figures 42, 89, 173, seem to give a very good impression of the cases and sets of instruments they are intended to illustrate. The Catalogue, though it does not contain many instruments that are quite new, gives all the instruments that are likely to be required by medical men and practical physiologists. We find illustrated a good form of Dudgeon's sphygmograph, Cook's ingenious form of vaccinator, and a good form of steam-spray apparatus, with a special gauge, showing pressure to 80 lbs. There is a very full and convenient list of chemical apparatus, suitable for medical officers of health and public analysts. The second section, devoted mainly to objects used in microscopical and physiological work, mentions almost every article that is likely to be needed by advanced observers, including the latest dyes. Some little revision will probably be needed in future editions of this Catalogue.

NEW INVENTIONS.

CELLULOID HYPODERMIC SYRINGES.

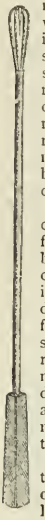
Celluloid is one of those vegetable composition which it has from time to time been attempted to utilise for various purposes in the place of wood, India-rubber, and leather. It has been extensively used by dental surgeons in the manufacture of plates for carrying artificial teeth, and is said to be superior for that purpose to anything that has previously been introduced. Messrs. Nicholls and Son are now utilising it somewhat extensively for many of the small articles hitherto manufactured of wood and India-rubber. Celluloid certainly surpasses all previous substances of similar character, not only in its adaptability to various uses in connection with surgical appliances, but in its attribute of appearing in some articles as hard as wood, while in others it is as elastic and pliable as the softest India-rubber. It has even been found advantageous as a substitute for glass for certain small instruments, such as the hypodermic syringe to which we shall presently refer. Celluloid, as supplied by its manufacturers, is a hard substance of considerable weight, has evidently been subjected to great pressure, and is of homogeneous character. It is supplied in any colour, and this colour partakes of the homogeneity of the substance; for, how much soever the mass may be softened, rolled out, run into moulds, and again hardened, the original colour still penetrates the whole mass. In melting or softening a block of celluloid, the atoms appear to distend themselves considerably, and, in forming it into such delicate instruments as catheters, no webbing is required; though hard, it is perfectly elastic, and may be tied, twisted, or bent into any form without the slightest injury. When shown to us as a stethoscope, we find it as hard as wood, and even less likely to break. For thermometer cases, pessaries, specula, etc., it is equally applicable; and, amongst the imitations we have seen, those of tortoiseshell, malachite, and amber were excellent examples. We append an illustration of the hypodermic syringes made by this firm. In place of glass, the manufacturers have found by experience that celluloid is better adapted for them. For this purpose the celluloid is by powerful hydraulic machinery pressed into seamless tubes of the required shape.

It is in this state nearly as transparent as crystal, and offers decided advantages over glass. Breakage is entirely obviated; the celluloid is not so sensitive to the changes of atmosphere, and, consequently, the piston is not so liable to derangement, and there is, therefore, little doubt that celluloid will shortly take the place of glass for this and kindred articles. These goods can be procured from all instrument makers, in town or country.

A NEW CERVICAL CURETTE.

The difficulty of removing the plug of ropy mucus which fills up, and, in some cases, hangs from the os uteri, as in chronic endometritis, cervicitis, etc., must have been experienced by every gynæcologist; and its detrimental effects, by protecting the cervical walls from the action of the usual escharotics, and so retarding the patient's cure, must be sufficiently apparent.

It is usually recommended to clear the canal of mucus by the introduction of the probe, armed with wadding dipped in glycerine; but this is not at all sufficient, nor does the removal of such discharge, as can be seen through the speculum, give any idea of how much still remains, the coagulation of which, by the subsequent caustic applications, neutralises, if it do not altogether destroy, the desired effect of the remedy. The woodcut represents an instrument which has been found exceedingly useful by Dr. Alexander Duke of Dublin, in the cases here referred to.

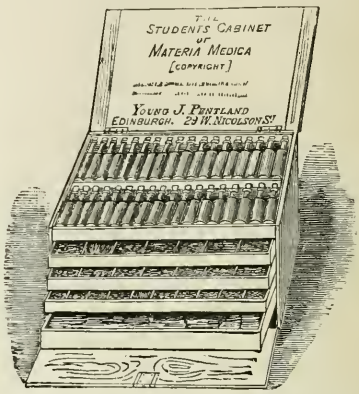


It is simply introduced through the speculum into the cervix as far as it will go with facility, which is generally up to the inner os, but in some cases it will pass much further, owing to the relaxed condition of the parts. It is then rotated slowly several times, and withdrawn, when the top of the instrument will be found filled with tenacious mucus. A brisk shake will dislodge its contents, and it can be reintroduced till all the mucus is thus removed. The cervical canal is then in a fit condition to be acted upon by the usual applications, and Dr. Duke has found that by this simple means the time occupied in the treatment of the case can be very considerably shortened.

The curette has also another advantage, as the rotation of its blunt edges in the cervical canal destroys those granulations and enlarged follicles, for which some practitioners recommend the use of a sponge-tent. The instrument is nickel-plated, can be cleansed in an instant by being either held under a stream of water or rapidly whisked through the same, and it has proved so useful in the hands of Dr. Duke the inventor that he does not hesitate to make it known, in the hope that it may prove equally useful to others. The maker is Corcoran, Bachelor's Walk, Dublin.

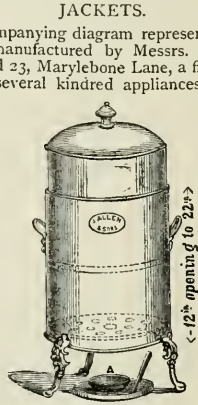
PENTLAND'S CABINET OF MATERIA MEDICA.

Mr. Young J. Pentland of West Nicolson Street, Edinburgh, has recently introduced a compact and valuable little cabinet, specially prepared for examinations in materia medica. The case, which is of polished pine, is of the size of 13 in. by 8 in. by 6 in. It has a lock and key, securing a lift-up lid and a fall-down door in front, disclosing five drawers, neatly divided into small sections, separately labelled, and containing no fewer than 163 specimens appertaining to therapeutics. The accompanying illustration conveys a fair idea of the cabinet, the specimens selected for the composition of its contents having been decided upon with care and intelligence. Mr. Pentland has avoided introducing those commonplace substances, with which the merest novice in pharmacy should be conversant; his object being to make the student thoroughly familiar with those organic and inorganic materials that abound in the pharmacopœia, for a knowledge of which, unless he has had exceptional advantages, he is obliged to fall back upon an accumulation of dry or uninviting detail. Here the substance is placed under the observation of the learner, thus enabling him to overcome many of his difficulties, and causing him to take an increased interest in his study, and so familiarising him with the objects that he will be able to recognise them at once in future examinations. The cabinet is very complete and handy, and the price at which it is offered (£2 10s.) will bring it within the reach of a large number of the young men now preparing themselves for the medical profession. Mr. Pentland has taken the opinion of several of the leading lecturers on materia medica, both in Scotland and England, as to the value of his cabinet to the student, all of whom have, we understand, expressed the most thorough approval of it.



A STEAMER FOR POROPLASTIC FELT JACKETS.

The accompanying diagram represents an useful apparatus manufactured by Messrs. J. Allen and Sons, 21 and 23, Marylebone Lane, a firm who have introduced several kindred appliances which have been noticed in these columns on various occasions. The one now before us consists of a steamer for



softening poroplastic felt jackets previously to their application, for which it will be found an easy and convenient method, the operation being as follows. A perforated tray rests about 2 inches from the bottom inside the cylinder, and below this about two pints of hot water are placed. The jacket is now put in—the tray preventing it from coming into contact with the water—and the upper cylinder placed over it; this fits closely into the lower one by means of a packing round the bottom edge. A spirit-lamp holding sufficient spirit to vaporise the water stands under the vessel, and the steam thus generated softens and expands the jacket, the upper cylinder slowly rising as the expansion increases, until the spirit in the lamp is consumed, when the jacket will be ready for use.

IMPROVED CABINETS FOR MICROSCOPIC SPECIMENS.

Mr. J. B. Medland, of 12, Borough, London Bridge, whose efforts in the manufacture of cheap microscopic specimen cabinets has been favourably received by the profession, and whose preparations for histological work are extensively used by students in several of our leading hospitals, has recently brought out a compact little cabinet holding six dozen specimens, which he is offering at the moderate price of five shillings. The box is of polished mahogany, with a lift-up lid and fall-down front for the easy removal of the trays. The improvement consists in the fronts of the end pieces of the box being grooved with a tongue at either end of the fall-down front to fit into them. This makes a very perfect joint, and prevents the admission of dust into the case.

SELLERS' 'QUINQUININE'.

This preparation, made by Mr. Sellers, of Farringdon Road, represents the whole of the active principles of calisaya bark. In general appearance, it resembles ordinary sulphate of quinine, and possesses many of its characteristics. It dissolves readily in acids, forming a transparent colourless solution. It may be administered in the same doses as quinine, either as a tonic or as an antiperiodic. We understand that it is largely used in hospital practice.

MACKENZIE AND CO.'S COMPOUND COD-LIVER OIL EMULSION, AND OTHER PREPARATIONS.

The Compound Cod-Liver Oil Emulsion was introduced some years ago by Messrs. Mackenzie of Edinburgh, and is now so well known, that it is hardly necessary that we should refer at any length to its properties, especially as many favourable opinions have been expressed regarding its utility. It contains 50 per cent. of the finest cod-liver oil with six grains of hypophosphite of lime in each ounce, and a full dose of pepsine. It is a complete emulsion, the globules of oil being finely broken up, thereby securing complete assimilation. It will be found of much value in the treatment, not only of phthisis, but of scrofula, rickets, and many wasting diseases, both of children and adults. It is an invaluable preparation.

Messrs. Mackenzie and Co.'s special list of new remedies is very complete, and contains the names of many drugs that are undoubtedly of much value as therapeutic agents. Cascara sagrada, for example, is an excellent remedy for constipation, and is now largely used both in this country and in America. Damiana has the reputation of being a powerful aphrodisiac, whilst grindelia robusta and quebracho are amongst our most valued remedies for asthma. Messrs. Mackenzie's preparations are excellent.

WILSON'S 'LINIMENTUM PLUMBI LACTATIS COMPOSITUM'.

This liniment was first introduced about two years ago by Mr. J. P. Wilson of Reading, and has since attained a high reputation as a valuable application in cases of burns, scalds, ulcers, and other conditions attended with local inflammation or irritation. It is an opaque whitish fluid, not unlike milk, and its value depends on the fact of the lead being in combination with albumen, and not with acetic acid, as in ordinary Goulard's solution. It is an astringent and sedative, and may, it is said, be applied freely without fear of inducing constitutional symptoms. Painted on with a large camel's hair brush, it is used with advantage in cases of eczema, especially in the acute stage, and to allay the specific heat and redness of the arm which sometimes follow vaccination. Its astringent properties make it of much value for checking discharges of various kinds, and it forms a most useful lotion or injection for otorrhœa, conjunctivitis, and leucorrhœa. It has a remarkable power of allaying itching and irritation, a property which makes it popular with patients, and should ensure its extensive use. We hear that it has been supplied to the troops in Egypt.

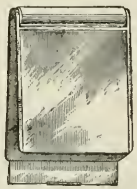
KANOLDT'S APERIENT TAMARIND LOZENGES.

The aperient tamarind lozenges, introduced by Herr C. Kanoldt of Gotha, are eminently suitable for a mild laxative for children, while they may be used with advantage by adults for the same purpose. These lozenges are made from the pulp of the tamarind fruit, the acids of which are neutralised by the addition of carbonate of magnesia; coated with chocolate, and covered with tinfoil they more resemble a sweetmeat than a medicine, are consequently readily taken by children, and have the further advantage of keeping in any climate. They are prompt and certain in their action, without producing griping pains, may be taken at any time, and do not necessitate any change of diet. Mr. Paul Metz, of 10, Jewin Street, E.C., has the sole English agency for their sale.

THE 'STAMPHIX', OR STAMP-HOLDER.

The 'stamphix' is a useful little invention introduced by Messrs. A. Collard and Co., of 211, Oxford Street, for the easy and rapid affixing of postage or receipt stamps, as well as being a receptacle for holding them. The accompanying illustration represents it of full size, and it will hold any number of stamps from one up to about two dozen. The stamps are placed in the box singly; and, when required for use, the envelope is wetted with the tongue, the box is placed on the wet part, the bottom, secured by a spring, is withdrawn, when the lowest stamp is attached, by at the same time pressing the lid with one of the fingers and holding the box for a second on the wetted surface. Should the stamp not be properly impressed on withdrawing the box, a little

roller, shown in the engraving at one end, is passed over it, and the operation is complete. All this is the work of a moment, and we believe stamps may be affixed more readily by these means than by the



ordinary process. The stamphix is made suitable for presents in gold, silver, oroid gilt, electro-plated, and also in plain metal, at a cost of one shilling each.

'THE DOCTOR'S' LAMP.

The Silber 'Doctor's' Lamp is one of the Silber Light Company's, Whitecross Street, well-known reading lamps, adapted for laryngoscopic examinations, and when not required for this purpose it is equally useful for reading. The Doctor's Lamp can be had for burning colza oil, or any of the mineral oils known as kerosene, petroleum, or paraffin; it being only necessary when ordering to state which oil the lamp is required to burn.

The principles of the Silber Light are now so well known, that it is hardly necessary to do more than remind our readers that steadiness, purity, and brilliancy are its chief features, and that for the study, the consulting-room, as well as dwelling-house, it is unsurpassed by any other light obtained from any description of oil.

DIETETIC NOVELTIES.

A NEW LIQUEUR.

'Liqueur Chateau Selbois' is the name appropriated to a cordial introduced by Messrs. E. G. Wastall and Co., the extensive wine merchants, of Ramsgate, Dover, and Margate. This liqueur is new only as far as the general public are concerned, having been in use for a long period in the families and amongst the friends of those who originally made it. Messrs. Wastall, having obtained the original recipe for this liqueur, have made certain alterations calculated to improve it. The orange flavour is clearly present, though not intrusively so, leaving an agreeable aromatic taste upon the palate, in which we may trace the faintest semblance to an orange bitter. Beyond the ordinary uses of a liqueur, Chateau Selbois is recommended on account of its carminative qualities, and for seasickness. It also forms a pleasant drink in conjunction with aërated waters and iced drinks, mixes well with sparkling wines, and forms a welcome addition in the preparation of punch. Château Selbois will also be found an agreeable and wholesome liqueur for after-dinner use.

KEMMERICH'S EXTRACT OF MEAT.

This extract of beef, prepared by E. Kemmerich and Co. on their estate at Santa Elena in the Argentine Republic, is introduced into England by Messrs. Rockwood and Co., of Long Lane, E.C., and comes to us with good credentials from some of the leading professors on the continent of Europe, and a satisfactory analysis by Dr. Hassall. A two-ounce pot of this extract is said to contain the constituents of 5 lbs. of meat, which is a pound more than is claimed by some of the best preparations before us, and this, coupled with the fact that it is offered to the trade at a less price, makes the Kemmerich extract cheaper than most other extracts. Dr. Hassall says, 'It possesses an advantage over similar preparations, containing a relatively smaller amount of water, and a greater proportion of solid constituents of meat.' The reason assigned by the proprietors for being enabled to offer their production at a lower rate is, that their mode of preparation is of a more economical character than that usually adopted; and, having an almost inexhaustible supply of wood upon their estate, an abundance of fuel is at command, which advantages enable them to cheapen the first cost. Another improvement on which great stress is laid, is the improved construction of the pots in which it is sent out. These are made with screw-down lids of earthenware, which, with the assistance of a simple washer, are calculated to make a hermetic seal with the least possible labour.

CONROY'S MALT COFFEE.

Conroy's Malt Coffee is a combination of carefully selected malt with the very best coffee, prepared by a new and special process. It makes a pleasant beverage, which is readily taken by dyspeptics and others with whom ordinary coffee disagrees. The value of malt as a digestive agent is so generally recognised, that this special preparation cannot fail to become popular both with the public and with their medical advisers. We have given it a trial, and are much pleased with it. Messrs. Evans, Son, and Co., of Liverpool, are the manufacturers.

MISCELLANY.

ARTIFICIAL AËRATED WATERS.—Another striking evidence has been afforded, by the outbreak of a small epidemic of typhoid, of the carelessness with which some manufacturers of artificial aërated drinks employ sources of water not free from suspicion or elements of danger. It is commonly enough supposed that, where the water-supply is suspicious, safety may be found in the soda water, seltzer, or ginger-beer. This, however, obviously depends upon the purity of the water employed in their manufacture. Little as this is regarded, it deserves much more consideration than it generally receives. It is the last cause of infection to be investigated; but the observation on a former occasion, by Dr. Thursfield, of an outbreak of typhoid due to the consumption by a shooting party of soda water made with impure water, has been followed this month by a sharper and more extended attack of typhoid due to ginger-beer made with similarly infected water. Pure natural mineral water has of late years become the resource and luxury of a large part of the population, and such accidents as this are likely to strengthen the habit. None the less, it is important for sanitarians to keep an eye to the now plainly proved source of infection, developed in the unexpected direction of artificial aërated waters.

THE CANADIAN MEDICAL ASSOCIATION held its annual meeting in Toronto on the 6th, 7th, and 8th of the present month.

THE EASY ADMINISTRATION OF MEDICINES.

By G. F. MEESER, M.D., Philadelphia, Pa.

A reprint from the 'MEDICAL MONTHLY', July, 1881 (Richmond, Va., U.S.A.).

THE 'easy administration of medicine' is a subject requiring the careful and thoughtful attention of physicians, as well as of interest for the convenience and pleasure of the patient. The advancement of homœopathy in certain sections of the country has depended, to a great extent, upon the easy and pleasant doses administered by followers of that school. The elegant pharmaceutical preparations compounded by the tasty and skilled chemist and pharmacist have done much to rob the physician's prescription of its terror and render the medicine palatable to the delicate patient.

Very recently, a new and important class of medicines has been introduced by the ingenious and enterprising house of Messrs. William R. Warner and Co., of this city, denominated 'Parvules'. They bear evidence of exquisite taste and skill, and I have seen nothing of late which seems to supply a necessity so perfectly as they do.

The list of 'parvules' prepared and kept in stock by this house comprises thirty-eight varieties. These 'parvules' are, for the most part, composed of simple substances in minute globular form, less in size than granules, and are sold in small vials suitable for pocket cases. They are convenient, portable, and easy of administration. The giving of small doses at short intervals, say every hour instead of every two or three hours or three times a day, produces a more salutary effect.

The question of the ready solubility of these 'parvules' claimed my attention, and this I proved to my perfect satisfaction by placing those containing camphor, etc., in the mouth and then observing the effect.

I have seen nothing to please me more than these ready-prepared doses. I can give four parvules of aloin, each containing one-tenth grain, at bed-time or at any time throughout the day, and get the full purgative effect desired without nausea or pain. I give these, one at a dose, three times daily, or occasionally for habitual constipation, with the utmost benefit. When liver troubles also occur, I give parvules of podophyllin, each containing one-fortieth grain, in a similar manner. Two parvules of calomel, each containing one-twentieth grain, given every hour for five doses, produce bilious evacuations, equal to ten grains of calomel as ordinarily administered.

These doses are in no sense homœopathic when given by this rule: one every hour, two every two hours, or three every three hours. To illustrate the fact that these are allopathic, let us take a parvule of morphia, one-fiftieth grain, and give one every hour. This would equal about one-half grain during the twenty-four hours. The various medicated waters which are now so liberally patronised for their aperient effect, etc., I believe are harmful, because they disturb digestion by diluting the gastric juices and reduce the temperature of the stomach. Parvules of aloin, one-tenth grain each, or of podophyllin, one-fortieth grain each, would replace the use of such waters most advantageously.

A NEW CLASS OF REMEDIES FOR PHYSICIANS' USES.

PARVULES.

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This is a new class of medicines (minute pills) designed for the administration of remedies in small doses for frequent repetition in cases of children and adults. It is claimed by some practitioners that small doses given at short intervals exert a more salutary effect. *The elegance and efficiency of Parvules, and the avoidance of cumulative effect, depend on our mode of preparation.* The Dose of any of the Parvules will vary from one to four, according to age, or the frequency of their administration. For instance, one Parvule every hour, or two every two hours, or three every three hours, and so on for adults. For children, one three times a day is the minimum dose.

Price 1s. per Bottle of 100 each. Discount for quantities.

Pocket Cases, with 20 varieties, for the use of Practitioners, 24s. net. Ditto, with 10 varieties, 12s. net.

SUPPLIED BY ALL DRUGGISTS, OR SENT BY MAIL ON RECEIPT OF PRICE.

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Medical properties—Alterative, Anti-periodic.

Acidi Salicylici .....1-10 gr.
Med. prop.—Anti-rheumatic.

Acidi Tannici.....1-20 gr.
Med. prop.—Astringent.

Aconiti Rad. .....1-20 gr.
Med. prop.—Narcotic, Sudorific.

Aloin .....1-10 gr.
Med. prop.—A most desirable cathartic.

DOSE.—4 to 6 at once. This number of Parvules, taken at any time, will be found to exert an easy, prompt, and ample cathartic effect, unattended with nausea, and in all respects furnishing the most desirable aperient and cathartic preparation in use. For habitual constipation, it replaces when taken in single parvules, the various medicated waters, without the quantity which they require as a dose, which fills the stomach and deranges the digestive organs.

Aluminis .....1-10 gr.
Med. prop.—Astringent.

Ammonii Chloridi.....1-10 gr.
Med. prop.—Diuretic, Stimulant.

Antimonii et Potass. Tart. 1-100 gr.
Med prop.—Expectorant, Alterative.

Arnicæ Flor .....1-5 gr.
Med. prop.—Narcotic, Stimulant, Diaphoretic.

Arsenici Iodidi.....1-100 gr.
Med. prop.—Alterative.

Belladonnæ Fol. .....1-20 gr.
Med. prop.—Narcotic, Diaphoretic, Diuretic.

Camphoræ .....1-20 gr.
Med. prop.—Diaphoretic, Carmiative.

Calomel .....1-20 gr.
Med. prop.—Alterative, Purgative.

DOSE.—1 to 2 every hour. Two Parvules of Calomel, taken every hour, until five or six doses are administered, (which will comprise but half a grain), produce an activity of the liver which will be followed by bilious dejections and beneficial effects, that twenty grains of Blue Mass or ten grains of Calomel rarely cause, and sickness of the stomach does not usually follow.

Cantharidis .....1-50 gr.
Med. prop.—Diuretic, Stimulant.

Capsici .....1-20 gr.
Med. prop.—Stimulant and Carminative.

Cathartic Comp. Officinal ....1-3 gr.
Med. prop.—Cathartic.

Cathartic Comp. Improved ..1-3 gr.
Med. prop.—Cathartic.

Digitalis Fol. .....1-20 gr.
Med. prop.—Sedative, Narcotic, Diuretic.

Dover's Powder.....1-3 gr.
Med. prop.—Anodyne, Soporific.

Ergotinæ.....1-10 gr.
Med. prop.—Emmenagogue, Parturient.

Ferri Redacti .....1-10 gr.
Med. prop.—Tonic.

Gelsemini Rad. .....1-50 gr.
Med. prop.—Nervous and Arterial Sedative.

Hydrarg. Bi-Chlor. .....1-100 gr.
Med. prop.—Mercurial, Alterative.

Hydrarg. cum Creta .....1-10 gr.
Med. prop.—Alterative.

Hydrarg. Iodid. .....1-20 gr.
Med. prop.—Alterative.

Hydrastin .....1-20 gr.
Med. prop.—Tonic, Astringent.

Iodoformi .....1-10 gr.
Med. prop.—Alterative.

Ipecac. .....1-50 gr.
Med. prop.—Emetic, Expectorant.

Morphiæ Sulph. .....1-50 gr.
Med. prop.—Narcotic, Sedative.

Nucis Vomicæ .....1-50 gr.
Med. prop.—Tonic, Stimulant.

Opii .....1-40 gr.
Med. prop.—Narcotic, Sedative, Anodyne.

Phosphorus .....1-200 gr.
Med. prop.—Nerve Stimulant.

Piperinæ .....1-20 gr.
Med. prop.—Tonic, Anti-periodic, Carminative.

Podophyllini.....1-40 gr.
Med. prop.—Catbartic, Chologogue.

Two Parvules of Podophyllin, administered three times a day will re-establish and regulate the peristaltic action and relieve habitual constipation, add tone to the liver, and invigorate the digestive functions.

Potass. Bromidi.....1-5 gr.
Med. prop.—Alterative, Resolvent.

Potass. Arsenitis .....1-100 gr.
Med. prop.—Alterative.

Potass. Nitratis.....1-10 gr.
Med. prop.—Diuretic and Refrigerant.

Quiniæ Sulphatis .....1-10 gr.
Med. prop.—Tonic, Anti-periodic.

Santonini .....1-10 gr.
Med. prop.—Anthelmintic.

Strychniæ .....1-100 gr.
Med. prop.—Nerve Stimulant, Tonic.

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This purely vegetable mild aperient effects a gentle relief of the bowels, without causing irritation. Excellent remedy in cases of habitual constipation. Pleasant to take, and causing no griping pains.

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The Proprietors of

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AND

LONDON MEDICAL RECORD

Will publish EARLY IN DECEMBER, and present GRATUITOUSLY, to the present Subscribers to those Journals, and all others who may subscribe to them before the *close of the year*, a very complete

DIARY FOR THE YEAR 1883.

The Diary will be of similar size with the two Journals, will be *handsomely bound* in cloth, will be interleaved with blotting-paper in all the necessary parts, and will contain valuable information for the use of the physician and general practitioner, collected from home and foreign sources, statistics, and other matter interesting to the Sanitarian, and those engaged in improving appliances connected with the public health, as well as the usual business addenda generally to be found in such Year Books.

As this is the first time such a work has been presented gratuitously to the subscribers of a Sanitary or Medical Journal, the proprietors trust that this step on their part will be appreciated by their patrons, and tend to aid the increasing interest that is being taken in these popular works.

The Diary will be sold to Non-Subscribers at 2s. 6d.

A limited number of Advertisements will be admitted in the Diary, the charge for which will be that of the published tariff of the SANITARY RECORD. Present Advertisers, in either of the Journals, may have their announcements inserted at a price according to the number of insertions for which their order was originally given, viz., if 12 insertions were originally arranged for, they will be inserted in the Diary at the 12 insertion rate, and so on.

Applications for *special positions* will be considered in the order in which they are received, and it is respectfully suggested that, as there are but few, early application be made to avoid after disappointment.

All communications on the subject to be addressed to the Publishers,

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The BRITISH MEDICAL JOURNAL, May 20, 1882.—'Mr. Feltoe, of Albemarle Street, has introduced a lime juice which he guarantees, and which is certified by chemists and physicians who have tested it, and which we find, to be free from adulteration, and pleasant to the taste. In flavour, brightness, and quality, the "Spécialité Lime Juice" appears to be all that could be desired, and it belongs to a class of beverages which can be freely used.'

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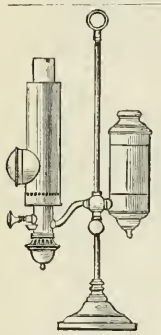

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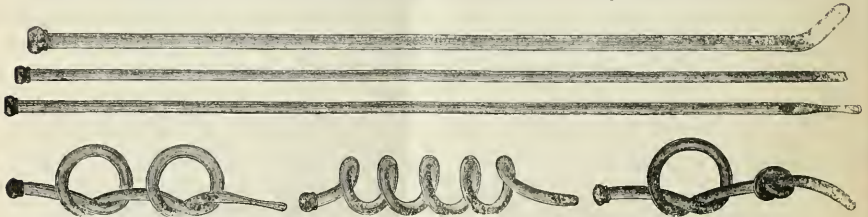

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At NEWCASTLE-ON-TYNE, from the 26th September to the 21st October. On this occasion the SANITARY RECORD will be represented at the Exhibition, space having been secured for a Stand; and the Manager, or some authorised member of the Staff, will be present, who will render information to those desirous of becoming Subscribers, inserting Advertisements, etc.; and it is hoped that Exhibitors who intend showing any specialities will call our attention to them as early as possible, that we may arrange for their illustration in our Report. The October issue of the SANITARY RECORD (October 15th) will contain

A FULLY ILLUSTRATED AND EXHAUSTIVE REPORT OF THE EXHIBITION;

and **FIVE THOUSAND ADDITIONAL COPIES** will be printed, over and above its ordinary circulation, all of which will be sent to leading Sanitary Engineers, Architects, Builders, Landed Proprietors, Noblemen, Medical Officers of Health, etc., etc., which will offer a valuable opportunity to Advertisers to make their Autumn and Winter specialities known, as well as those articles that are always in demand.

No additional charge to the tariff of the SANITARY RECORD will be made to Advertisers in this Number, and it is hoped that this concession will be appreciated.

The Publishers unhesitatingly assert that on no previous occasion will so large a number of a high-class journal devoted to sanitary matters have been distributed at one issue; and beg to intimate that this circulation will be extended to *India, China, the Colonies, and the Continent of Europe*, and will be placed in the hands of well-known firms or individuals, capable of influencing orders, or of buying direct themselves.

Advertisers desiring special positions should communicate at earliest convenience with the Publishers,

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THE MEDICAL PRESS AND CIRCULAR reports:—'Hazeline is a valuable astringent remedy, wonderfully efficacious in checking *internal* or *external hæmorrhages*, and for *allaying inflammation*. It is particularly valuable in the treatment of *bleeding piles*, and as a *surgical dressing* it deserves attention.'

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"New York Medical Journal," *August* 1880, Dr. F. Weir,
in Lecture delivered to the College of Physicians and Surgeons, New York.

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